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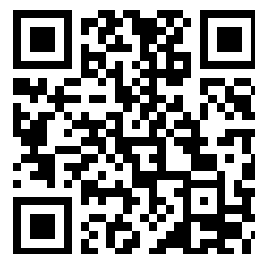
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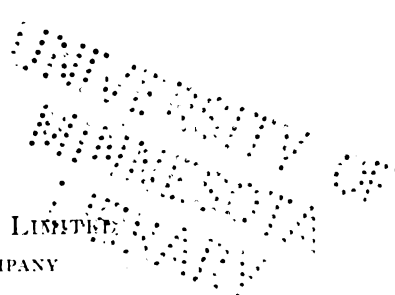


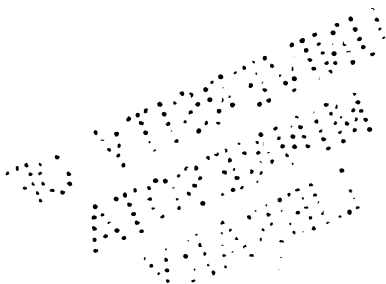
The School World

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SIXPENCE.

JUNIOR SCHOLARSHIPS IN GIRLS' SECONDARY SCHOOLS.

By Edith CADMORE.

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THE object of providing scholarships with public money for young children may be assumed to be twofold. The community hopes to profit by the increased efficiency of a chosen number of its members, and hopes, too, that the individual of exceptional ability will be thus enabled to lead a more useful and happy life and act as an advertisement for a liberal education.

The problem of the choice of the lucky individual to receive public help is most difficult. Though a university scholarship is often rightly bestowed upon a brilliant candidate standing in no immediate need of pecuniary help, it is questionable whether the trustees of public funds may be considered justified in helping persons who could pay their own children's school fees without undue pinching. The English nation still tends to look upon higher education as a costly fad which may safely be foregone as a luxury unless somebody else can be made to pay for it. I have known a junior county scholar whose parents presented her with a bicycle costing double the year's school fees as a reward for her success; another, whose parents could afford to take her for motor trips abroad in their own car, while a gold watch and chain or similar present of jewelry is a not uncommon gift from the parents of a successful competitor.

It is galling, at any rate to a teacher who is herself a ratepayer, to see a child of very limited powers, and no great keenness or industry, from a home well provided with more than necessities, profiting in part by the thrift of parents of non-scholarship holders who have much ado to feed and clothe their children suitably, much less pay their school fees. I have in my mind's eye a contrast of the kind in this neighbourhood. The scholar lives in

a pretty villa, rented at certainly not less than £28 to £30, the father being a well-to-do artisan. The other pupil's father is the proprietor of a small boot-shop, and both he and his wife bear on their faces the marks of exhausting toil, while the child is always poorly, though neatly dressed and never has any pocket-money for small luxuries.

On the other hand, it must be admitted that a candidate from a very poor and populous home cannot profit fully by the scholarship, because of the lack of space, quiet, leisure, and perhaps even more of that mental encouragement so much needed by the pioneer even in such a humble departure as a secondary education. Think how much the intelligent curiosity of the better-placed child is stimulated by the interest of its relatives and friends, and its development promoted by the conversation and reading in the home. The presence of many of these very poor scholars injures the most democratic school, because by their manners, speech, and dress, they tend to frighten away the children who must form the bulk of the pupils; and it is a doubtful kindness to a sensitive child, conscious that the other pupils notice what to them are inexcusable defects, to expose it to constant little wounds to its pride, unless a substantial future benefit may be expected in compensation.

If it is difficult to select the child whose environment shall make it a suitable subject to profit by higher education, how much more difficult is it to devise the best means of testing the physical and mental qualifications of the numerous candidates. More consideration might well be given to quickness and acuteness of the senses, to unusual bodily energy, and to will-power. The present written examination, though good and reasonable, does not appear to differentiate sufficiently among the candidates. There are still too many kept an hour or more daily beyond the already long school-hours in the elementary school to be prepared for this competitive test, simple as it

is, and who therefore enter the secondary school wearied in brain and body by the prolonged effort and strain. Such children often take a couple of years to regain their elasticity, if they ever do. Perhaps such extra fatigue, and the fact that she had already passed eight years in the elementary school before, may account for the mild reason given by a junior scholar for abandoning her scholarship a year before its expiry: "I'm a bit tired of school."

In the choice of the scholars, as well as in the question of the continuance of scholarships, more might be left to the judgment of the expert heads of elementary and secondary schools. A scholar, suspected of being slightly deficient mentally, was found, upon inquiry, to have been placed sixteenth only on the head-teacher's list of candidates in the school from which she came. The first on the list had failed, though she very shortly afterwards came out triumphantly in a more difficult competition. There must always be a great element of chance in competitive examinations, especially among young children. Yet any teacher of experience could say after a short written and oral test, and an interview with a child, whether it was likely to be able to profit by the type of teaching, and could be expected to fit happily into the school life of a particular school. In awarding scholarships, the lists in order of merit of the head teachers of the elementary schools, who, in spite of their large classes, usually know the characters and even the home circumstances of their candidates pretty thoroughly, might well be consulted by the adjudicators, especially in doubtful cases.

The most practised teacher may, however, be mistaken, or the pupil may develop differently from anticipation; but even then less than the usual three years' grace would prove whether the candidate was benefiting or not, and in the latter case should be otherwise employed. For when a girl has won a scholarship, it should be demanded from her that she justify the honour of the choice, at least by industry and effort. When she obtained it, there were large numbers of disappointed candidates, some probably nearly as deserving as herself; and more ought to be expected from the scholar than from the ordinary paying pupil who was in no case chosen for her ability. Years ago the secondary-school teacher was chary of reminding a girl that she held a scholarship lest it might be looked upon as a badge of poverty. Now that we have known parents certainly in no need of monetary help who declared that they made their daughters compete in order that they might be placed with a clever and hard-working set, we no longer hesitate to say to such a girl that she must strive to fulfil the hopes centred in her, as well as justify the

expenditure of public money. We cannot too often remind ourselves that habits of industry and thoroughness are formed in youth, and to allow young folk to fall into easy-going ways is to do them a permanent injury. The parent of the ordinary pupil is only too ready to try the drastic remedy of removing his child, on complaints from the school authorities of lack of interest and industry.

At the end of the trial three years it ought to be possible for a school to rid itself of its idle or indifferent scholars; but it is not. Schools are usually held to be interested in keeping up their numbers; therefore, in ridding themselves of these undesirables, they might be thanked for performing a disinterested public service, for they might well keep silence and retain them for the usual five years, or even beyond, by making it easy for them to pass into the ranks of bursars and student-teachers, whether entirely suitable or not, thus ensuring two more years of their fees.

What so many of our scholars most obviously lack is energy and independence. The result of the long education in large classes in the elementary schools is to produce a kind of negative, passive, unthinking good behaviour. The girls are quiet, obedient, well-drilled, often even industrious, but if they have been at school, as so many have, from three years old onwards, at the age of eleven or twelve, when they reach the secondary school, it is most difficult to alter their attitude—with the majority, impossible. They remain quiescent beings, willing to receive, but not to be moved to form, much less utter, an opinion on any subject. Their tastes are often impossible to discover. When they leave school they want to find the easiest job. How often do the mothers of these scholars not say, "My daughter is not fit for heavy work," and it will be found that the girl covets only a poorly paid clerkship, without the intention of making herself thoroughly efficient even in that. The good junior scholars make excellent elementary-school teachers; but many who would be fairly well fitted for that calling object to the hard work necessary to qualify for it, as well as the prospect of evening preparation and corrections in the future. An able scholar said once: "If I am lucky, and get an intermediate scholarship, I shall go into the civil service; if not, I must be a teacher." I regret to say that she had to become a teacher.

From my observations of junior scholars for many years, I have come to the conclusion that about a third make desirable secondary-school pupils, never brilliant, never very original, but industrious, helpful, intelligent girls. About a third would probably do equally well in life if they had never quitted the elementary

school; while another third should never have been helped to leave it. These last are the girls who entirely fail to profit by the best thing that the secondary school has to impart, a share in the intangible, indescribable something, known generally as the "atmosphere" of a school. A very democratic, poor, professional woman, when asked why she sent her daughters to an expensive high school, rather than to a neighbouring municipal secondary or to an elementary school, replied, "Those schools have no traditions. I dare not send my girls there." Now she here hit upon the reason why it is a national mistake to have forced so large a percentage of elementary scholarship children upon the poorer secondary schools. These pupils bring no traditions with them; many never acquire any. Consequently the school loses heavily by them in something which is of greater importance than fees. Because, too, of their presence in large numbers, the girl from the well-to-do, cultivated home tends to disappear from the poorer secondary school—another heavy loss to it, for such girls, from their circumstances, bring with them a disinterested outlook on life which the child from the narrower home can scarcely be expected to have acquired. One such girl with a feeling of responsibility towards her less fortunate comrades, and a power of leadership, is a genuine benefactor to a poor school.

Of the undesirable type of scholars it may be said that it is mainly their vanity which is fed by their secondary school experience. Because their *h's* are safe while their mother misuses them or disregards them entirely, they look upon themselves as superior to their parent; and the possession of the little French and mathematics which they cannot avoid acquiring confirms them in their respect for their own superiority. It must be remembered that many of these girls come from families where boys and girls are looked upon as grown-ups at the age of fourteen, and are given, or take, a considerable amount of personal liberty even before that age. The mothers of these pupils not only have no misgivings as to the safety of the girl of fourteen who spends many hours of the evening outside with her "young man," but she usually defends her daughter from attacks on her by the authorities of the school, when these, aware of what is going on, attempt to force their pupil to spend at least five evenings of the week doing the school work which she is practically paid to do. Such girls develop much younger in certain respects than the normal secondary-school pupil, and methods of training and discipline suited to the latter seem childish and boring to the former. Yet the school and its

methods must conform rather to the needs of the 75 per cent. of its normal pupils than to those of the 25 per cent. of scholars, and the scholars of the type last described do not constitute more than a fraction of the whole. These are, however, the girls who not only do not benefit, at least after the first two or three years, during which time they sometimes do creditable work, but they injure the school compelled to keep them longer.

I am inclined to think that the only junior scholars who fully justify the large outlay of public money upon them are those who early show a distinct taste for books, and who find their main pleasure in reading; especially those who later hope to adopt teaching as a profession. For these, undoubtedly, the five years in a secondary school open out a prospect of usefulness and an ideal of work which should be of advantage to the nation. There is a great outcry against a child's being asked to choose or even to think of a vocation at eleven or twelve years of age, but many pupils at that early age will tell you that to become a teacher is their ambition, and this ambition acts as a useful incentive to serious and regular work.

The money more or less wasted upon the other scholars would be better spent in improving the conditions of work in elementary schools, especially in reducing the size of classes, and in providing more single classrooms—in a word, in approximating more nearly the elementary to the secondary school as regards building and equipment. At present many of the elementary schools must fall far short of their own ideals through sheer material deficiencies. When I pity our young teachers with their classes of fifty or sixty little ones, they often reply, "Oh, it's as easy to manage sixty as twenty," and I know that it would be cruel to tell them that such "management" is not education, for it is all that is possible in the circumstances. Then, too, larger numbers might be enabled to profit by the central school with a "handicraft bias." Those with a "commercial bias" should probably not be in existence at all, because the poorest parent can, seemingly, find means to give his child the short and superficial training in the typing, shorthand, and so-called "business methods" necessary to fit a girl for an inferior clerkship—for such preparation there never appears to be a lack of funds.

It would be interesting if the Board of Education, which is furnished with ample statistics for the purpose, would tell the public what careers have been followed up to the present by the junior county scholars. My conviction is that all who are not teachers have become clerks—surely an anti-climax.

CAN WE DETERMINE AND ESTABLISH A STANDARD OF ENGLISH SPEECH?

By WALTER RIPPMMANN, M.A.

THE proposal to "standardise" anything arouses instinctive opposition almost inevitably. The love of tolerance, of letting every man do as he pleases, the demand for "freedom, elasticity, and variety" are so deep-seated in the national character, that efforts to organise and standardise are regarded with suspicion.

The suggestion of a "standard speech" is met at once by the indignant cry: "You want all to speak in the same way," or: "You want to destroy our dialects." This, however, is based on a misconception of what is meant by "standard speech," and of the position which it is intended to occupy.

To put it quite simply, what is required is a standard pronunciation; and the acceptance of this will not mean that there remains no difference in the speech of men. Two people may utter a sentence with the same pronunciation, yet their intonation (the speech "melody") will vary; or their rate of speech may differ; or they may stress different words: it is in these variations that individuality shows itself. Again, two people may say a sentence in the same way as regards pronunciation, intonation, etc.; yet we recognise the voices, even without seeing the speakers. There are differences in the nature of the vocal chords, in the shape of the mouth, in the muscular activity of tongue and lips, which have their effect on the resulting speech sounds.

Monotony is not a matter of pronunciation at all. We do not complain because the people we meet pronounce words in the same way as we pronounce them. Indeed, if we are at all sensitive to speech (and fortunately we are becoming so more and more), a mispronunciation jars upon us even more than a misprint, and we consciously avoid pronunciations that we know to be unusual among the educated. The sentiment that animates us is perfectly sound. Speech is an instrument for intercourse among men. Like any other instrument it may assume the form which best fits it for its purpose. Writing is another instrument of communication. We can write in a clear and pleasing way, or in an ugly and indistinct way; we can spell badly or well, according to the conventional rules—we *have* standardised here, but in a shockingly bad way. Just as we strive to give the written words a form that will convey the meaning to our readers without causing them trouble, so we try (or should try) to speak without distracting our hearers' attention from what we say by the peculiar way in which we say it.

We accordingly adopt a form of speech which has gradually developed apart from the dialects, though ultimately based upon them. It is as artificial (in a sense) as the vocabulary of the literary language, which leads us to regard some words and expressions as permissible, others as "obsolete," "vulgar," "unidiomatic," etc. The development is in both cases the natural result of social causes. As long as men passed their whole life in a confined district, they talked the same dialect, and—if they wrote at all—represented the sounds of their dialect in the same way. But with improved means of communication, the concentration of men in towns, the establishment of literary centres, intercourse among the educated brought together from all parts in school or university, local varieties of pronunciation (and of vocabulary also) tended to disappear, and a form of speech gradually arose which was not equivalent to any one dialect, but rather a kind of compromise. During the nineteenth century the conditions were particularly favourable; it has been rightly pointed out that our boarding-school system has been an important factor in securing uniformity in the speech of the educated, but I believe that still more is due to the great progress in women's education during the last half-century; the improvement in speech effected in the girls' day schools is often quite remarkable. The net result is that there is now a far larger number of educated people pronouncing the language in much the same way than even one hundred years ago.

What are we to say of this more or less uniform pronunciation? Let us not say, as some too readily do, that it is decayed, deteriorated, worse than it used to be. If it has become worse, will those critics kindly tell us when the pronunciation was good? Probably they have no answer; but it matters not what period they designate as that of good pronunciation, for it can easily be shown that at all times people have complained that speech was deteriorating, simply because they found that the younger generation would not agree to speak as they did. Language left to itself is exposed to change; though why it changes at any particular time and place we do not know. Changes going on now are treated as signs of deterioration by many who fail to recognise that the whole development of the language is due to changes of exactly similar nature; when they are told of a sound change in the sixteenth century they do not regard it as a "symptom of decay."

They are inclined to see such a symptom in the reduced vowels of unstressed syllables. (It is this particularly that upset our Poet Laureate, as he has shown at some length in

his "Tract on the Present State of English Pronunciation.") Now this is a recognised feature of the Teutonic languages, and is the direct consequence of the system of accentuation peculiar to them. If you consistently stress the stem, other syllables tend to be reduced—and this reduction principally affects the vowels; a comparison of Old English or Old High German with Middle English or Middle High German shows this very clearly. The *e* of *name* (Old English *nama*) used to be pronounced, but we do so no longer; and this is typical. I suppose nobody would suggest that a return to the Old English vowels is desirable in such cases. It is in words more recently incorporated in the language, mainly from Latin (directly or through French), that our pronunciation is supposed to be "slipshod." Complaint is made that we give the same pronunciation to *alter* and *altar*, *stationery* and *stationary*; yet these words have developed as we should expect them to do in a Teutonic language. The stem has received the strong English stress, and the other syllables have consequently been reduced. Anyone dispassionately considering the history of the language cannot see any deterioration here.

In other respects we may even maintain that our speech is more "correct" than that of our more immediate predecessors; for in some cases the spelling has been influencing the speech, and many have come to regard as "correct" what seems to agree with the spelling. Once the recognised pronunciation of *picture*, *nature* was *picter*, *nater*. Later it became *piccher*, *naitcher*—the forms most commonly used now. There are some who would prefer *pictyer*, *naityer*. *Ejucation*, *ojius* (for *odious*) were regular in educated speech not long ago; we now pronounce more in accordance with the spelling. In *forward*, the *w* used not to be pronounced; it has been restored. *Sparrowgrass* was universal for a time, and it was considered pedantic to use the form *asparagus*, which is now the only recognised form in educated speech. The influence of the spelling is likely to increase when education is compulsory. In some schools the *w* of *Southwark*, long departed, has been resuscitated, *England* is pronounced with the *e* of *end*, and the *t* of *often* is sounded. Next we shall have *hand-kerchief*, *whis-t-le*, *k-nit*, with the *nd*, *t*, and *k* audible!

Now all this is distressing to the philologist. He watches language as the botanist watches plants; the natural growth interests him, and what is, is right. The landscape gardener, the horticulturist, do work on different lines, which appeals to him only incidentally, if at all. By various devices there may be de-

veloped a very beautiful flower, or a particularly prolific apple, or a seedless orange; these things do not concern the botanist as such. Similarly the philologist is not directly concerned with the beauty of speech or its utility. He studies language as it was and is; he considers the sounds, and values the spelling in proportion as it faithfully represents them; but the influence of the spelling on the pronunciation is, to him, a preposterous thing. The non-philologist does not appreciate this point of view; he has learnt the spelling, often with much effort, and he knows very little about the spoken language. As a consequence, he attaches inordinate importance to the spelling, and is quite ready to let it influence his speech.

The philologist, constantly observing change in language, is inclined to view any attempts at checking it with suspicion, or to regard them as doomed to failure. Because a language has been made up of dialects and these have never been stable, he contends that stability is impossible; and he asks what justifies us in thinking that the standard we wish to establish is worthy of such distinction.

In answer to this it may be urged that the conditions which have rendered a standard speech possible and desirable are such as the world has not known before. As has been mentioned, there is increasing agreement among educated speakers of English; and this has come about with little conscious effort. The systematic and scientific study of speech sounds has for centuries been confined to a few scholars; and, on the whole, our schools have done little to teach the pronunciation of English, until recently. But there are welcome signs of change. A knowledge of phonetics is becoming more general; and with it the desire to know what we are to teach as "good English pronunciation." When we have determined that, our teachers will gladly teach it; at present they are supposed to correct the speech of their pupils, but do not always know what is "correct." As a result the children will learn the good pronunciation at school, to their great disadvantage; for, possessing only their local speech, they are likely to be much hampered in their career; and if they know how to speak well and clearly they will rejoice in the spoken language, and literature will gain new force and beauty for them. What is more, they will learn to appreciate their local speech at its true value, and an interest in dialect will be awakened that may have very satisfactory results.

It is necessary, however, that we should reach some agreement as to this standard speech; for it must be conceded that on a

number of points there is still variety among the educated, and to determine these and to suggest a compromise will be the task of the Conference on Standard Speech which many desire. We should like to know whether we should restore the *wh* sound; whether the *a* in *answer* should be pronounced as in *father* or as in *hand*; whether *adult*, *recondite*, *miscellany*, *laboratory*, should be stressed on the first or on the second syllable; whether the *s* of *hosier* should be pronounced as in *hose* or as in *leisure*; and so on. It is quite conceivable that the Conference might, in some cases, take up the attitude that both pronunciations of a word that are in common use should be permissible; but as a rule it would be possible to give the preference to one form.

Without maintaining that the present speech of the educated, regularised in some such way, would be a finer form of English than that of any previous age, we might boldly maintain that at any rate it is present-day English in its best form, and that we have no reason to suppose that if we take no such steps the language will become finer of its own accord. Standard speech is in a sense artificial; but it is no more so than the social life that presupposes it. The very fact that it is the outcome of British civilisation justifies us in considering it a fit instrument, and in striving to remove what appear to us defects. When we have succeeded in this we have in compulsory education the means of making it universal. Not only in England. From all parts of the Empire and from abroad comes the same inquiry: "What are we to teach as good English pronunciation?" We cannot remain deaf to the appeal. Change may continue in the dialects, as heretofore, and no one is any the worse; but the absence of a standard can only lead to increasing divergence of speech in the farspread dominions beyond the seas, and in the United States, and with divergence of speech goes divergence of sentiment.

Let us then give our thoughts to this worthy task of letting the whole world know how English should be pronounced; and to this end let us record the speech of those who seem to us to speak best, and invite the opinion of those who, in practice or theory, are concerned with the voice. It is not only the philologist or the teacher of voice-production that we should summon to our council; we may learn, too, from stage and bar, from pulpit and parliament.

It will be a great thing when we are able to say that no child leaves our schools without having learnt to speak well. We shall then have achieved an incalculable gain to society, and done a great service to what is destined to be the language of universal intercourse.

THE PLACE OF THE TEXT-BOOK IN MATHEMATICAL TEACHING.

By EDMUND LIGHTLEY, B.Sc. (Lond.).

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IT would be a true but trite remark, with respect to mathematical text-books for secondary schools, to say that their number is legion. Now that the development of new and less stereotyped methods in the teaching of this subject has become general in ordinary secondary schools, there seems to be no end to the issue of school text-books. It would appear, from a survey of them, that a selection might be made to suit almost any individual inclination.

Practically all these text-books differ from their predecessors of previous generations in that the subject-matter is no longer divided into separate artificial and academic compartments for distinctive and exhaustive treatment. All modern writers appear to appreciate, to a greater or less degree, that the pupil's mind and reasoning powers are in process of development, and that it is not advisable that the ordinary boy should do his mathematics mainly as a matter of expediency, or by the exercise of will-power under the influence of some stimulant. A greater use is made of his surroundings and interests, and observation and independent investigation are encouraged.

Assuming that the supply is based on the demand, there seems to be an increasing tendency to use only books of examples instead of those containing explanatory text and worked examples. This is more particularly the case with regard to text-books in arithmetic and algebra. The question arises as to whether this tendency is educationally sound, and to what extent it is desirable. Should everything be developed orally and by the pupil's own research, assisted by the master and blackboard demonstration, or should the pupil study the explanations and worked examples in the text-books and worry out their meanings and applications? Much, of course, depends on what is understood by oral and blackboard explanation. A pure demonstration with the class listening and supposedly absorbing ideas and methods of operation is almost barren in its effects. The only merit that can be claimed for it is the introduction of the personal element. The text-book writer is less liable to have allowed his work to develop in grooves, having the successes and failures of his predecessors in text-book manufacture to assist him in preserving a moderately free and open treatment. If, however, the process is a mutual development of the subject by teacher and class, so that the latter

is led at times to journey alone, then the question is largely one of the stage of development of the pupil. Both methods have their merits, and each in its turn meets an essential requirement and fulfils an important function of school education.

Classes as well as individuals are not all of the same type, they do not all show like capability, and the same difficulty is not an obstacle to all. There is an atmosphere embracing both a class and its master, an atmosphere created and dominated largely by the personality of both. Problems arise and difficulties must be negotiated to which there is but seldom more than one key, and this can only be successfully employed by the intuitiveness of the master.

It is essential, in the earlier stages, to inculcate correct and progressive notions capable of being developed and expanded in subsequent work. The actual text-book work done must keep pace with these notions, but cannot adequately replace the proper guidance of the teacher. Different classes, of presumably the same standard, progress at different rates. The class individuality finds difficulties in varying directions, and the subject-matter has to be adapted and varied to correct and strengthen the notions it is desired to impress. This involves attacking certain sections of the work from fresh points of view, and here the use of a text-book may be a distinct disadvantage. The treatment given by the book may be as good as, or even better than, that of the master, but it cannot replace his knowledge of individual requirements or his guidance in the elimination of faulty ideas. It may, indeed, materially interfere with the work by inducing some pupil to follow the types in the book, in the hope of obtaining a correct solution to his problem and thus losing the benefit to be derived from his own investigation of the question, from the point of view developed in class. Here one of the great disadvantages of text-book explanation is involved. For the careless, lazy, or indifferent boy the text-book is a means to an end. He reads the explanation and follows the worked examples only to the extent that is necessary to enable him to turn out correct solutions to the exercises, and his negligence becomes evident when he meets with a problem which is not quite on the lines of the type.

Again, in the early stages of mathematical instruction, it is now considered important not merely to break down the barriers which were formerly erected between the different sections into which the subject is divided, but to show the connection of one with the other and to allow them to be mutually helpful. No text-book can do this so thoroughly as the teacher

who is keen to get the full value out of his subject; he must to a very large extent follow his own bent, but if his pupils have to follow the track marked out in some text-book the co-ordination of the subjects is almost sure to be lifeless and of an artificial character.

Whoever has tried to clarify the notions of decimal notation possessed by a boy of twelve, commencing his secondary school course, or attempted to show him the need for contracted operations and for limiting the number of figures by which the result is to be expressed, will be convinced of the necessity for class development of this branch of the work. If the pupil is to acquire a clear notion and to learn the proper handling of this new tool, his quantities must be obtained by his own imperfect measurements. He must be led to appreciate his own inaccuracies and to understand the limitations of the measuring instruments employed. He should be able to indicate the untrustworthy figures in his subsequent computations and to give his own reasons for their abandonment. Whilst fundamental concepts in geometry are being obtained, the accompanying practical exercises provide a convenient opportunity for the establishment of these principles. This, together with the demonstration of the elementary formulæ in mensuration, which are required for the early stages of the science course, affords ample opportunity for the formation of correct notions concerning the extent to which figures, provided from other sources, are trustworthy. The pupil will understand why calculations to a given number of decimal places are required and will appreciate the futility of multiplying and dividing out. With a foundation laid in this manner the subsequent treatment of calculations to a given number of significant figures will be greatly simplified.

The case of generalisation from arithmetic to algebra, and the opportunities arising therefrom of examining the arithmetical processes, which have a tendency to become too mechanical, scarcely needs to be mentioned.

Graphical treatment, whether used for purposes of illustration or as a tool, is essentially a section of mathematical work for class development. It may be used in its earlier stages to assist the work in the geography room and later in the science laboratories. The actual examples arising in this connection must depend on the type of school and its schemes of work. The text-book which provides a large selection of graded examples of varying types has fulfilled its purpose in this branch. The cases in which graphical illustration is needed arise from class work. Its object may be to overcome some difficulty presented by a problem or to give pictorial representation of

some section of the work whereby a proper perspective may be obtained and the relative importance of the parts more clearly shown. The power of interpreting a graph can only be obtained by the individual investigations and reasoning of the pupils, preceded and followed by discussion and question development in class. The book may give the question and follow it by a correct interpretation, but it cannot guarantee the intermediate thinking effort of the pupil, neither can it prevent him from accepting the conclusion arrived at simply on the ground that what the book states must be correct. This attitude of mind is really more prevalent than is ordinarily appreciated. It is not entirely dissociated from the teacher. A beginner, and even a moderately good teacher, would greatly minimise the difficulties which arise at the progressive stages of his work if he placed less reliance on the text-book and worked out for himself the method of presentation of the matter. The interpretations placed on the text of some books would greatly astonish the authors. Truly it is said, "Papier ist geduldig."

A too rigid adherence to text-book treatment does not give scope for the utilisation of what might be termed "accidents." A very intelligent and often a dull pupil asks a question with respect to some exercise. A proper appreciation of the difficulty giving rise to the question will often provide the matter for an investigation which will require quite a series of lessons for its completion. In the process several widely separated sections of the text-book may be used for examples of a suitable nature, and this to much greater advantage in the absence of explanatory text.

Is it then desirable that text-books containing explanatory matter should be interdicted and the pupil have access only to books of examples? By no means; this would be to deprive him of some of the essential features of his educational training. Two important functions have to be fulfilled, not merely in completing the school course in mathematics, but in conjunction with the rest of the curriculum, in preparing the pupil for his life when school days are ended. It is not educationally beneficial that the path of learning should be made easy at all stages. There is a decided mental and moral stimulus to be derived from wresting the meaning out of a text-book by persistent effort, from studying the explanation given from varying points of view, and from applying the principles set forth in different directions until their bearing and application are thoroughly grasped. The effort required involves consistent concentration of thought and attention, and if properly directed is one

of the chief aids to thoroughness. Especially is this applicable to mathematics. A manual on this subject cannot be scanned rapidly and its general content absorbed. The consequences are dire, and such a hasty survey, with the resulting superficial acquaintance with the principles involved, brings in time its own difficulties and punishments. The completion of the task of worrying out a meaning by unaided effort, an effort requiring much time and pains, brings with it a sense of satisfaction which a demonstration by another does not arouse. The knowledge obtained is more likely to be of a permanent character, but the mental and moral benefits derived supersede this to a considerable extent. One seemingly great difficulty mastered, another is approached with added determination and confidence. It, too, shall yield up its secrets and render accessible still greater heights. Though the pupil is not knowingly conscious of these advantages, it is an obligation on the part of the master to provide them.

There is also another and more utilitarian aspect. A pupil, leaving school, sets out without his full equipment unless he takes with him the ability to use a text-book to its full advantage, and the faculties, necessary for this purpose, adequately developed for application to the practical problems of his after-life. He will not always have the opportunity of carrying on his studies under any expert guidance other than that afforded by the text-book. He would have an indisputable grievance against the tuition he had received if this had not been provided for. He needs to be shown what there is in a text-book and how to get it out.

Naturally, the transition from one stage to the other will be gradual. It requires careful handling. Lessons may be given in class leaving information to be supplemented from the book, or specific work set for preparation and afterwards tested to ensure that it has been adequately grasped. As the rate of progression in this stage increases much individual assistance is necessary. The teacher's labours are not lightened. The mental attitude of each pupil must be fairly well understood and appreciated before he can be materially assisted. This has almost as great a value for the master as for the pupil. The former will obtain many valuable lessons if he is prepared to acknowledge that many of the difficulties which present themselves to the pupil are due to his own defective teaching. The faulty and incomplete notions which obstruct the pupil's progress are not solely due to inattention to previous lessons or to lack of mathematical ability on his part, but may indicate deficiencies in the presentation and formation of early notions.

Opinions will vary as to where the transition should be commenced. Assuming the course in an ordinary secondary school as being spread over a period of four years, it may be commenced during the second year, but should certainly not be postponed long after the commencement of the third, though this can only be adequately determined by the progress of the class itself.

MANUAL TRAINING AS AN INTRODUCTION TO EXPERIMENTAL WORK.

By T. S. USHERWOOD, B.Sc.
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"An *instinctive*, irreflective knowledge of the processes of nature will doubtless always precede the scientific, conscious apprehension, or *investigation*, of phenomena. The former is the outcome of the relation in which the processes of nature stand to the satisfaction of our wants."—Ernst Mach.

"Boys work indeed in laboratories, but they commonly work under so minute direction that they never feel the spur of an unsolved problem. Consequently they never exercise analytic thought in an attempt to solve such a problem. . . . Laboratory work is only profitable when it is a definite and conscious seeking by each individual pupil of the answer to a problem which he himself has felt as such. . . ."—Welton. *The Psychology of Education*.

DURING the last fifty years a great change has come over our social life. Science, using the term in its everyday significance and not in its original sense of general knowledge, was once the hobby of the leisured few; it is now the premier industry affecting, either directly or indirectly, every other industry and the occupations of all men and women. Two centuries ago the life of any average member of the community differed but little, so far as we can judge, from that of previous civilisations. But science has given us new and hitherto undreamt of powers; it has revolutionised both peace and war; and efficiency in science is unquestionably the greatest of national assets. The unscientific nation is doomed to extinction: its competition is negligible.

The recognition of the overwhelming importance of science should shape our educational policy; but, as a profession, teachers are naturally conservative. We are slow to accept new ideas and, whether from mental inertia or from the cramping effects of our training—conditions which may be inter-related—we are prone to neglect facts and manufacture hypotheses to suit our predilections. Nevertheless, an advance is being made and science is coming to her own, even in our schools.

An integral part of the machinery of science

in education is the manual training school. Through handiwork and in the workshop scientific curiosity is most naturally aroused; and here it is that the boy receives most rationally his introduction to formal school science and mathematics, at least, if it be true that it is the utilitarian aspect which most appeals to the child mind, and that it is uneducational to make any step with the pupil until he vividly realises its necessity.

Teachers of science and mathematics owe more than they admit, perhaps more than they realise, to the establishment and extended use of workshops. It is there, probably, that their pupils are brought into close contact with the phenomena from which pure science must arise; the content of experience is daily increased so that more stability is assured for the base on which, at a later stage, are raised the formal superstructures called mathematics, physics, chemistry, and so on. But in spite of this, it is everywhere apparent that far too little use is made of the assistance manual work affords. Partly because it is a new-comer while the systems which obtain in the mathematical class rooms and the laboratories are more or less stereotyped, partly owing to "incompatibility of training," the opportunities for investigation offered by the problems arising in and the operations of the workshop are practically neglected. The teacher of mathematics to whom Euclid is sacred and whose mechanics is a medley of inextensible strings, frictionless pulleys, rigid bodies, and such unnatural phenomena, finds it hard to realise the difficulty experienced by the average boy in understanding what is connoted, say, by the "triangle of forces," even when it is illustrated in the current experimental fashion; for no boy can appreciate the necessity for such an abstraction at the age when the formal study of mathematics and science commences, unless his mechanical experience is wide. Think of the experiments on "the inclined plane" as carried on day after day in nearly all schools, and then think of the workshop where inclined planes are in daily use on a practical scale. It is then possible to realise the waste of opportunity and valuable time.

Nearly the whole system of our elementary mathematical and science work is on a par with the "Euclidean" system of teaching geometry, now, one is glad to know, buried and nearly forgotten. This elaborate structure, valued for its logical form and development, has been shown to rest upon unsatisfactory and illogical premises. So practically the whole of our modern elementary teaching of mathematics and science rests on an unnatural basis selected by the teacher to suit his own conception of the desirable order of

development, instead of growing naturally from the personal needs of the boy. Mathematics and science must, of course, be taught; but their foundations generally either are matters of intuition or they rest upon experiment; and it is in the workshop that the appeal is most vivid and that the genesis of the problems to be studied is most natural. The waste of opportunity may to some extent be measured by the multiplication and elaboration of apparatus in laboratory and class-room and by the overlapping of activities caused by want of co-ordination.

A possible method of considering the curriculum is to tabulate the various branches of study which are regarded as necessary, then to consider their relative claims, and finally to allot the available time in proportion to their relative worth as gauged by some recognised consensus of opinion. Any subject may be valuable in two ways. It may be useful *per se*, in that a knowledge of the subject is essential to intercourse, to mere communication and to bare living; or, it may be extrinsically valuable in virtue of its effect on development whether mental, moral, or physical. If the subject is intrinsically important in the sense defined above, it must find a place in the curriculum and the amount of time to be allotted will be a function—probably an inverse function—of the age of the child. Thus, the acquisition of a knowledge of the vernacular, of certain "facts" of science, of facility in using the eyes and limbs, and of the power to perform simple calculations, occupy the greater part of the school time of pupils under nine. But, even at this age, interest is taken in things not really necessities and it is legitimate to extend the child's studies in other directions. Thus subjects which are expedient as opposed to necessary claim consideration. At a later age, with ever-widening interests, the number of necessary subjects increases; but so too does the number of auxiliary subjects; and the problem of the curriculum is the adjustment of the balance of studies, the reconciliation of the conflicting claims of necessities and luxuries; for after all, what is not necessary is a luxury, although most of us would voluntarily forgo what others might consider necessities, if we might retain our pet luxuries.

Adopting as a working hypothesis this method of regarding the curriculum, it will probably be admitted that manual training is valuable both intrinsically and extrinsically; and, if it be logical to assert that no investigation should be undertaken until its necessity is appreciated, the value of handwork as a source of problems should be apparent to mathematician and science teacher alike. A

few notes on this aspect of manual work are appended as illustrations.

The present forms of many tools in common use have been arrived at in haphazard fashion; they have been evolved from the primitive tools used by our prehistoric ancestors, not by the scientific processes of reasoning through which an intricate piece of modern machinery is invented in order that a particular piece of work may be done with delicacy, accuracy, and speed—almost as it were deliberately—but by long trial and test of some modification or other, sometimes no doubt designed, but more frequently the result of accident or blind chance. In their present forms we have undoubtedly either the tools which have proved most economical of time, material, and labour, or those which trend in the direction of economy. Inefficient and unsatisfactory modifications have been eliminated, useful forms permanently retained. It is in fact an example of the survival of the fittest; and, if two or more modifications of a simple tool exist side by side, it is because each type has its particular function to fulfil. At the same time, it is probably correct to say that the form which a tool has reached in this blind way is precisely that which would be designed or selected by a scientific inventor who had exact appreciation of the duty to be performed by the tool, even if he was ignorant of its history. Thus, for example, the sledge, the flogging hammer, the fitter's hand hammer, the carpenter's hammer and the mallet—all of which are probably chance modifications or adaptations of the flint fixed to a cleft stick used by primitive man—have reached their present forms by slow stages of development; but these forms certainly do not differ much from those which would be designed by a good mathematician, who could gauge precisely the work for which each was intended.

This consideration opens a field of research suitable for beginners at manual work, that is, for very young boys. Why should a tool have its precise form? Why should this tool exist in two or more distinct forms? Why should that tool vary in shape and form with the material for which it is designed? These and similar questions arise naturally; and a partial solution of such questions is not beyond the powers of boys whose knowledge of mathematics is of the slightest and whose knowledge of formal mechanics is zero. In fact, for such experimental work to be really valuable, virgin soil is desirable if not indispensable; it is certainly preferable to soil exhausted by bearing several crops of "courses on the triangle of forces." Many boys are doing handwork—and thus accumulating a

fund of sound "mechanical" experience which should prove of great service at a later stage of their scientific development—at an age when their mathematical equipment is bounded by the four rules of elementary arithmetic; but it would obviously be wrong to narrow the scope of their training by excluding such mechanical considerations. Success depends upon the spirit in which the work is approached and the reality of their experience; hence technical terms and "explanations" based on abstract reasoning must be excluded while experiments which appeal to intuition and common sense must be devised.

To tell a boy to "apply a saw to wood and push lightly, *i.e.*, exert a small force, and you will notice that the cohesion of the fibres prevents the saw moving forward," does not increase his experience; it may even be incorrect, as much depends on the saw and the material, and most saws are started by pushing and pulling "lightly." Statements of this kind ought not be made to beginners, who are incapable of understanding such generalisations. To talk at large about cohesion, molecular attraction, the triangle of forces, components, momentum, may sound well and impress the boy with the depth and extent of his teacher's knowledge, but sound ideas on such concepts are only gained through experiments—unless the boy is a mathematical genius. The workshops are the only places in school at which the experience necessary for a sound and rational foundation of mechanics may be gained; and they will serve their purpose but ill if they borrow the phraseology and methods of the class-room. And it is unnecessary to borrow. If simple experiments are arranged with the tools and apparatus ready at hand in the manual training room, either the experience may be rounded off and made to culminate immediately in some important generalisation, or attention is directed to some underlying principle which can be resumed in simpler terms at a later stage. It is essential that the means employed be simple; the use of elaborate apparatus often causes boys to miss the whole point of the experiment; it is as if they "could not see the wood for the trees."

Experiments on the "principle of the lever" are obvious. It is not advisable to speak of the three "classes" of levers, or even, perhaps, to define "fulcrum," "reaction," "moment," to beginners. It is certainly unnecessary to classify examples of various levers as in most books of educational hand-work. Resemblances rather than differences should be sought for and pointed out. The use of pincers, bowsaw, screwdriver, clamp, clawhammer, and other tools leads to first-

hand knowledge of the "principle of moments." This, with its corollary the "law of machines," may be generalisations beyond the reach of a beginner, but he is accumulating knowledge which leads to complete appreciation of the generalisations when the time is ripe. Some experiments on these principles might be carried out in the usual manner—as in the mechanics laboratory—as soon as it was recognised that a principle was involved, as soon as the likeness between one manifestation of the principle and another was clear, and as soon as its everyday application was realised.

Another matter of common knowledge which readily lends itself to scientific study is the variation in the cutting angles of tools. This relation is often made to lead too rapidly to a formal statement of the principle of the triangle of forces and elementary graphic statics. So important a principle should not be stated too early. It must not be forgotten that in the "triangle of forces" we are dealing with an abstract idea: the great intensities of stress set up in a very keen edge *may* involve principles of quite another kind to those considered in graphic statics; although it is true that the triangle of forces is concerned in finding the pressure needed for paring, which depends upon the cutting angle more than upon keenness of edge. Again, if a mallet is employed, we have to consider impulses rather than forces; and the material may be sheared, crushed, torn, or otherwise distorted. Surely the complexity of the problem forbids a formal statement of the conditions governing the composition and resolution of forces at so early a stage? It is, however, not only permissible but desirable to *measure* the alteration in the pressure required for paring produced by a variation in the cutting edge. Apparatus for this purpose is set up easily and during the experiment evidence is soon forthcoming that a very acute edge is valueless in practice on account of its instability. The conflict between theory and practice is nowhere more marked than in cases of this kind and the difficulty of making valid hypotheses is evident. But actual experiments on such problems are comparatively easy to arrange, while they make for strength of conviction and clarity of conception. It is the almost subconscious appreciation of such experiences which will be most valuable when the time is ripe for generalisation.

A problem allied to the last is that underlying the reason for the various shapes of saw teeth. In particular, the difference between the rip saw and the hand saw may be investigated. Models of the standard forms of teeth may be cut out in wood and

tested in various ways. Even the difficulties of arranging the conditions of the test are illuminating, for every conjecture as to the determining conditions in a given case is liable to error; while it is difficult to exaggerate the interest a class takes in this kind of work, particularly when the model is tested to destruction.

Experiments of the kind last mentioned lead to further tests on the "strength" of various materials, all of which can be carried out with the simple apparatus to be found in any workshop, provided strong spring balances are available. In many cases the experiments may even be quantitative, but qualitative tests are easier to arrange and do not occupy so much time. The direct connection between such experimental work and the actual handwork itself is particularly valuable. It is just this element of reality which is wanting in the laboratory, at any rate for beginners, and perhaps the suggestions given above may serve as a new jumping-off place for teachers who are tired of the usual "courses" in elementary science and wish to give their work an air of utility. All boys, practically, are keen on handwork; they will take up their formal work in science and mathematics more intelligently if they realise vividly its bearing on the actual problems of their everyday life.

SOME EXPERIMENTS IN PRACTICAL GEOGRAPHY.

By C. B. THURSTON, B.Sc.,
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ALTHOUGH it is not claimed that there is anything that will even seem new to many readers of THE SCHOOL WORLD in any of the schemes outlined in this article, it has been suggested that a short account of one or two plans which have been tried with success to give some reality to the study of geography as a school subject may be of interest.

It should, perhaps, be pointed out that by "practical geography" is not understood the copying of maps showing various distributions, the construction of models and sections, the making of diagrams based on various geographical statistics, and the hundred-and-one things that fill the pages of most text-books of practical geography. It is admitted that all these exercises are exceedingly valuable and, indeed, necessary aids to the teaching of geography, and that their introduction has raised the standard of geography-teaching from bad to moderate; but can they be regarded as practical geography any more than the copying of diagrams and pictures of

apparatus, or the construction of curves from data supplied in a text-book, would be regarded as practical chemistry or physics?

But it is claimed that really practical work, designed to give some practice in obtaining first-hand and recording in the field certain geographical facts, is no less essential than is the practical work in the two sciences just named, if the boys are to have an intelligent appreciation of the subject.

Much of our geography, of course, cannot be taught *practically*. It is obviously quite impossible, in the present condition of school time-tables and educational finance and administration—though it may not be in a more enlightened future—to teach *practically* any of the geography of our colonies, or, indeed, of any but the nearest foreign countries; and here we have to fall back on the text-book, the lantern, and the kinematograph. But even in these days of cheap and easy travel, experience has shown that no farther than three miles from the doors of the school lies a country undiscovered and unexplored—by all, save the Boy Scouts—which, if they are only shown the way, boys will traverse with all the zest of an explorer in a new land, especially if the exploration is undertaken in school hours.

A brief account will be given of the three schemes which experience in an ordinary public secondary school for boys has shown to be quite practicable and useful in this direction.

I.—A FIELD DAY.

A whole form spends a complete school-day out of doors in a chosen district in the school neighbourhood. In order not to "interfere" (for such is the present state of all attempts at practical geography in most schools) too greatly with the usual school curriculum, the day is usually one towards the end of the summer term, when, too, the weather is most suitable.

Previous preparation is essential, and may occupy two or three lessons. Each boy is provided with a small note-book. At the head of each double page he writes a question, the answer to which is to be obtained during the day in the field. Under the question, one page is left for rough notes and sketches to be made in pencil on the spot, and the opposite page is left for a complete answer to the question to be written later at home. The completed note-books are collected and examined a few days later. This method ensures that each member of the party knows exactly what he is expected to do, prevents "slacking" by individuals, and does away with the need for very much supervision in the field. Different points in connection with the observations may be pointed out in these pre-

liminary lessons, or as they arise in practice, according as the teacher thinks best in each case.

The party is allowed to subdivide itself into groups of four, any one of which may be detailed to obtain information on some point where it is impossible or inadvisable for the whole party to work together. The number and difficulty of the questions can be varied according to the district, the age, and ability of the boys doing the work.

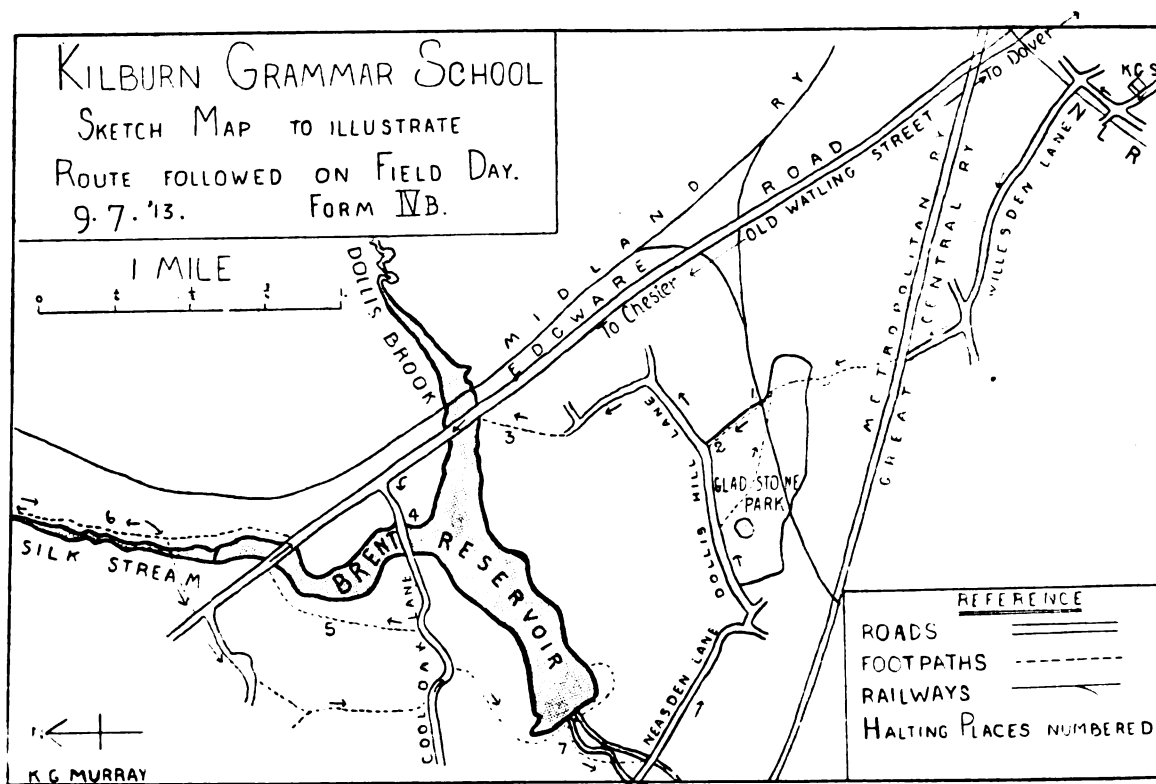
It is, of course, impossible in one day for the boys to construct a complete map of the whole district traversed, and so a fairly large sketch-map of the route is made from the

Measure with protractor the angle it makes with the dial. Compare with latitude angle of the place marked on the dial. Note time by dial if sun is shining. Compare with clock time.

Note bench mark on gate-post at top of the path. Work out gradient of the path (1) as an angle, (2) as a ratio.

At 3rd Halt.—A field overlooking the reservoir and main road.

Find by watch, sun, and compass direction of the footpath at this point. Compare with direction on map. Sketch the Brent Reservoir, as seen from this point, marking the bridges. What are the names of the great



ordnance map beforehand, and the points where special observations are to be made are numbered as in the accompanying map (drawn by one of the boys taking part).

The work done on this occasion included the following:—

At 1st Halting Place.—A bridge over the Midland and South-Western Joint Railway.

Find name of railway and where it leads. If possible find nature of traffic passing along it. How is the cutting shown on the ordnance map? Find bench mark on the bridge, and note its height recorded on the map.

At 2nd Halt.—A sundial in the park, having the latitude and longitude marked upon it.

Note direction in which the pointer is set.

main road and railway seen from here? Where does each lead? Note as far as possible the nature of traffic passing along each. Why does the railway run on a viaduct, and not on an embankment at this point? What is the nature of the soil, and what is growing in the fields near by?

At 4th Halt.—A bridge over the Silk Stream.

Find depth of Silk Stream at this point. In which direction is the flow? Note bench mark on the bridge, and compare with map. If sun is shining, take observations at noon for finding latitude.

At 5th Halt.—In a field to the north of the reservoir.

Lunch and an informal discussion of difficulties arising during the morning and of certain points of general and local interest, followed by a "free period" of an hour for rest or games.

At 6th Halt.—On the banks of the Silk Stream.

Party divided up into groups of four, and spread out along the course of the stream, with instructions to:—

(1) Map about 100 yds. of stream, including at least one bend;

(2) Find width, depth, and rate of flow, if possible;

(3) Draw section across the stream at a bend, showing slope of banks;

(4) Note what was growing in the fields on the banks.

At 7th Halt.—Note length and height of dam forming the reservoir. Observe from notice board to whom the reservoir belongs (the Grand Junction Canal Company), and thence deduce reason for its construction. Notice the old channel of the River Brent robbed of its water. Notice exit of artificial "Canal Feeder." Find its width, depth, and rate of flow.

II.—A SERIES OF HOLIDAY QUESTIONS.

An account of these questions appeared in *THE SCHOOL WORLD* in January, 1912.

Most boys in a school of this type go to a new district by the sea or in the country for a week or two in the summer holidays, and the rest have an opportunity—which experience has shown they are willing to use if properly directed—of exploring more fully their own neighbourhood.

The real value of practical geography not having been sufficiently recognised for adequate time to be devoted to it in the school course, this opportunity of getting some done out of school hours has been utilised.

In the last week of the summer term each boy is given a series of detailed questions dealing with the position, physical features, simple geology, tides, weather, simple astronomical phenomena, productions, industries, and communications of the district he is about to visit, and is given a note-book in which he may record his observations, the "holiday task" being quite optional. The percentage of boys taking the option, however, proves surprisingly large, and results not only in some really valuable work being done, but very often in some very cleverly illustrated accounts being handed in. By its means, too, a very representative geological collection has been obtained, and the boys acquire a stock of "raw material" which can be worked up in subsequent lessons.

III.—THE SCHOOL GEOGRAPHICAL ASSOCIATION.

This association is rather the outcome of than a stimulus to the interest in geographical work, although its influence in the latter direction is undoubted. It is confined to the boys of the two highest forms. Apart from the practical work which will be noted, evening meetings are held at regular intervals in which papers by members on subjects of geographical interest are read and discussed, and geological specimens, obtained as described above, are classified and labelled.

Visits have been paid to places of geographical interest, *e.g.*, the Natural History Museum (geological and zoological collections on separate occasions), the Meteorological Office, the Geological Museum, sections of the colonial collections at the Imperial Institute, and the map works of a well-known publishing firm. The really practical work carried out consists of—

(i) **OBSERVING AND RECORDING THE READINGS OF THE SCHOOL METEOROLOGICAL INSTRUMENTS.**—This is done by four members of the association for each term, the results being tabulated, summarised, and, where interesting, commented upon at the meetings of the association and in the school magazine. As an outcome of this work it may be of interest to note that four of our boys have obtained positions on the staff of the Meteorological Office.

(ii) **HALF-TERM HOLIDAY RAMBLES OR CYCLE RIDES** in districts of some geographical interest covered by the local ordnance maps. Similar observations to those described for a Field Day are made, but in rather less formal manner. Districts visited include the Thames Valley from Richmond to Hampton Court, St. Albans, and the Colne Valley, Chenies and the Chess Valley, and the Barnet, Elstree, and Stanmore Ridge.

(iii) **A FORTNIGHT'S HOLIDAY CAMP** in the summer vacation, in the course of which observations similar to those noted in the holiday questions can be made, under the guidance of the teacher himself, and without in any way interfering with the pleasure of a most healthy and enjoyable holiday. A short account of the geographical work possible by this means may be of interest. The district chosen on two occasions has been the Medway Gap in the North Downs, which, although only thirty miles from London, presents many features of historical, geographical, and general interest. The site of the camp was a hill overlooking the River Medway, directly opposite Chatham Dockyard and three miles from Rochester. This proved an admirable

centre for a number of most interesting excursions, including visits to—

(a) *Rochester*, with its fine old Norman keep guarding the spot where old Watling Street crossed both the River Medway and the parallel valley road, through the gap to Maidstone and the Weald. The old cathedral, the museum, and many spots reminiscent of the life and works of Charles Dickens were also visited.

(b) *Chatham*, with its dockyard filled with all the machinery of modern naval warfare necessary for the defence of the Thames estuary and the North Sea routes. In times of peace permission is easily obtained to visit the dockyard and some of the larger vessels.

(c) *Tilbury Docks*, with liners loading and unloading cargoes for or from the east. A good view of the Thames shipping is always obtained in crossing the river by the ferry from Gravesend, and permission is readily granted to board one of the large liners.

(d) *Sheerness-on-Sea*, with its land and sea defences of the entrance to the Port of London. The trip down the Medway to this point is most instructive in showing the silting up of a river in its lower course, and the resulting artificial aids to navigation. The various kinds of vessels passed, including giant battleships, swift torpedo-boats, Tyne-side colliers bound to Rochester and Chatham with house coal, Cardiff colliers with steam coal for the battleships, Medway barges outward bound with cement, and fishing smacks homeward bound from the North Sea were an unfailing source of interest. Two miles from Sheerness, a scramble over the cliffs of London Clay at Minster produced several fossils and specimens of selenite.

(e) *Blue Bell Hill*, on the crest of the North Downs escarpment. This was reached by a four mile tramp up the dip slope of the chalk from Rochester, and from the summit a magnificent view of the Weald and the winding course of the Medway, with the road and railway running alongside through the gap, was obtained. White gaps in the hillsides and forests of tall chimneys marked the sites of the cement works, an important local industry dependent for its raw material on the chalk of the Downs, the river mud, and imported coal.

The dolmen of "Kits Coty House," on the face of the escarpment, showed where prehistoric man lived on the open hillside above the forested lowlands, obtaining flints for his weapons from the chalk. More modern farming villages were noticed at the foot of the hill, dependent on springs issuing from the foot of the chalk and the fertility of the underlying clays.

A fortnight's stay by a tidal river visited daily for bathing or boating, or both, gave excellent opportunities for observation of the tides, and along the river side, within two miles, could be seen coming to the surface three distinct geological strata of the London basin—to the north London Clay dug out for brickmaking, succeeded by Thanet Sand which is sent across the river to the dockyard and used for moulding, and still further north by the layer of Chalk just emerging from the surface and quarried to supply local cement works.

Ample opportunity was also afforded for observation of the position and movements of the sun, moon, and stars.

During a fortnight spent in this way a considerable knowledge of the geographical features of the district is obtained, and the boys' note-books contain a mass of exceedingly interesting material upon which papers and discussions for subsequent meetings are based. It may be added that thirty shillings per head covers the complete cost of journey, hire of equipment, food, and excursions.

The value of the practical work done is probably greatest in the cases of the field day and the summer camp, when the teacher's help and guidance can be given; and it is obvious that there is at least one difficulty in the way of each of these schemes. The first cannot be carried out in a school worked on the "specialist" system without the goodwill of various members of the staff, whose classes will be disarranged; but unless this should happen too frequently, this difficulty should not prove insuperable. The second implies the "sacrifice" of at least a fortnight of the teacher's holiday. The only reply to this is that the stimulus that such a holiday gives to the geographical work in school, and the pleasure derived from the camp itself, prevents a feeling of excessive martyrdom. It is, however, realised that there is no very good reason why others should be asked to accommodate the geography teacher, or even why he should spend his own time in doing what should really be done in school hours, and it can only be hoped that the powers that be will in time realise the value and importance of this branch of school work and make adequate provision for it in the school curriculum.

Old Chronicles: Early Voyages from Hakluyt, Washington Irving's Old Christmas, and Selections from the Sketch Book. 124 pp. (Dent.) 6d.—These are further booklets in Mr. Burrell's series, called "English Literature for Schools." We have already reviewed earlier volumes, and the present books present no new features. Like the others, they are eminently suited for school reading; they are well edited, well printed, and well bound; and they are cheap.

PICTURES IN THE CLASS-ROOM.

By E. M. CARTER.

Whitgift Grammar School, Croydon.

THE present appears to be an opportune moment for British publishing firms to make an effort, by means of the products of British craftsmanship, to compete with the numerous pictorial reproductions of German manufacture which at present embellish the walls of many of our school class-rooms.

A movement inaugurated some eight or ten years ago by the leading publishing houses of Munich, Dresden, Berlin, and Danzig resulted in the flooding of the English market with a series of lithographs and auto-lithographs, some of them admirable, many of them otherwise, covering an extensive range of subjects. A wide advertisement was obtained for these publications through an exhibition organised by the London County Council, which stated in an introduction to the catalogue that "the object of the Education Committee in holding this exhibition is to encourage the production of pictures of a distinctly English nature." So far as one's observation goes, it must be admitted that up to the present this object has not been achieved, and the choice of pictures of home manufacture suitable for school decoration is still limited to the publications of the Art for Schools Association, the Autotype Co., and one or two other firms which work on similar lines. These publications, moreover, are mainly concerned with reproductions of notable and popular pictures, which necessarily lack the topical features and the intimate national character which contributed so largely to the attractiveness of the series of German lithographs already mentioned.

The delightful series of colour prints of Henri Rivière, which have long been obtainable from the Art for Schools Association, are undoubtedly ideal as decoration, but do not possess the interest which attaches to representations of actual scenes. Landscapes characteristic of different parts of the British Isles, views of places with historical associations, castles, cathedrals, ruins, and so forth, are subjects which, besides lending themselves admirably to pictorial treatment, would have a distinct educational value. Such a series of pictures would possess a living interest for the pupils, and, from their direct association, would form an invaluable adjunct to the lessons on geography, history, architecture, and numerous other kindred subjects. It should be within the means of some of our principal publishing firms to devise and produce such a series, on the broad and simple lines to which lithography is so excellently adapted. If this could be done with due re-

gard to suitability of subject and treatment it would fill a long-felt want and would probably find a ready market.

The subject of the pictorial furnishing of schools and class-rooms, depending, as it does, so much on individual taste and opinion, is one on which it is inadvisable to attempt to lay down hard and fast rules. In view, however, of what is so often found to pass muster as a decorative scheme, it may not be entirely superfluous to deal for a moment with one or two points which call for consideration in the selection and hanging of pictures.

In choosing a picture for school decoration the uses to which the picture may lend itself should be borne in mind. In this connection we may divide school pictures roughly into two classes. First, those which are purely decorative and the appeal of which depends solely on beauty of form, composition, or colour. In the second class we may place pictures which are interesting as having a direct bearing on the work of the school, such as scenes and episodes in history; battles, portraits, buildings, and architectural details; views of towns and cities; pictures illustrating physiographical features, and so forth.

It is not sufficient to expect a child to imbibe art culture from the mere contemplation of works of art; the pictures may create a transitory interest, but after a time they become commonplace through familiarity, and are accepted merely as a part of the scheme of wall decoration. In order that a picture may fulfil its function as a vital factor in the scheme of education it should be the subject of frequent reference. Every opportunity should be taken to utilise the picture in illustration or amplification of the subject of a lesson. A picture itself might occasionally form the subject of a lesson, dealing with its subject, composition, treatment, technique, and its historic or other interest, together with particulars of the artist, his period, contemporaries, and so forth. The method of reproduction might also come in for consideration, this being a subject but very vaguely understood by the juvenile mind. The pictures in a class-room probably representing a variety of reproductive processes—"lithography," "three-colour process," "line" or "half-tone" blocks, "etching," etc.—much useful and interesting information could thus be imparted which would do much to dispel the general haziness which exists regarding these matters, and would also lead incidentally to a keener appreciation of the pictures themselves.

On the assumption that familiarity breeds, if not contempt, at least indifference, it is well to have an occasional interchange of pictures between class-rooms.

In this connection it would be well to give a moment's thought to the question of the hanging of pictures. If it were not that the matter is very frequently overlooked it would appear unnecessary to remark that the prime considerations in the hanging of a picture are that it should be both visible and accessible. To this end, a picture-rail or moulding in the wall, at a convenient height from the ground, is extremely desirable. If the rail is too high (they are found sometimes just under the cornice) it necessitates a considerable length of cord or wire to bring the picture to the eye level and its inaccessibility is the cause of the picture being seldom or never moved; thus it becomes a dust-trap and a harbour of disease.

The lighting of a picture will also repay a few minutes' consideration. Placed opposite a window a picture is frequently obscured by the reflection; this can usually be effectively circumvented by altering the angle of the picture. A picture is, again, not seen to advantage if placed too close to a window (in the same plane), or on a strip of wall between two windows. It will be found convenient to have a number of frames made with hinged or movable backs, to allow for frequent interchange of pictures of passing interest, cuttings from illustrated papers, picture-show catalogues, and so forth. A great deal can be done, with a little thought and trouble, to make the classroom picture gallery a source of perpetual interest and pleasure as well as an item of considerable value in the illustration and amplification of the ordinary class lessons.

MATHEMATICS AND SCIENCE AS PART OF A LIBERAL EDUCATION.¹

By W. D. EGGAR, M.A.
Eton College.

THE methods of teaching the elements of mathematics and science have been discussed almost *ad nauseam* during the last thirteen years and more. It is not the object of this paper to question the merits of the changes in method. It is, however, necessary to note, as bearing on what follows, that the immediate cause of these changes in the majority of schools has been the change in the character of examinations. There has been in recent years a movement having for its object the simplification and standardisation of examinations for boys and girls. The notion of a school-leaving certificate has "caught on," with the result that almost every examining body has added to its programme a school-leaving examination, while all the old examina-

tions still remain. Between some of the examining bodies there is mutual recognition; between others mutual profit takes its place; but in all the school-leaving examinations elementary mathematics is a compulsory subject, and elementary science, physics, or chemistry, or physics and chemistry, will be found in most of them as an optional subject. Let us now suppose that a boy who is not intended for a scientific profession has passed an examination of this kind, and is proceeding to study at school classics or history or modern languages, or at the university perhaps law or theology or metaphysics. He becomes, in other words, a specialist, his general education being vouched for by his school certificate.

It is maintained by the writer that the elementary mathematics of all these examinations, including London Matriculation, Littlego, Responsions, and what not, is either too little or too much. From a purely utilitarian point of view, the average parson, justice of the peace, member of parliament, solicitor, man of business, requires nothing beyond a knowledge of plain arithmetic. If, however, he wishes to be in a position to appreciate new discoveries in physics, or to read with profit any new technical scientific book, he must always find himself handicapped by lack of mathematical knowledge; his simultaneous quadratics, supposing he remembers them, are of no use to him.

The average stupid boy nowadays probably receives a better education than he did fifty years ago. At least, it may be said that much more attention is given to his welfare. All the educational world's efforts seem to be devoted to him. Everything is done to make his path smooth and attractive. Meanwhile, the clever boy is neglected except on one side only. The abolition of the compulsory mathematical tripos for Cambridge classical men was the beginning of a movement towards specialisation which has spread right through English education.

The average boy's mind has naturally a utilitarian bias. Hence, with a view of enlisting his sympathy and interest, both mathematics and science are presented to him from the utilitarian point of view. This is all very well for the average boy; but the clever boy suffers by the exclusion from elementary mathematics and science of what is not strictly useful but only beautiful. Euclid, astronomy, and sound have disappeared from the average school course.

Nobody can be surprised by ignorance on the part of the average man. It is when we find an admittedly clever man ignorant of something which to us seems elementary that we feel a shock. I remember being asked by

¹ A paper read to the Educational Science Section of the British Association at Melbourne, 1914.

a brilliant classical scholar some question relating to the position of the sun at the battle of Cannæ. Now I did not know the day of the year of that battle; in fact, I did not know the century. So I asked him, and I am bound to admit he evinced no surprise at my ignorance. In return I think I told him that on that particular day the sun must have risen north of east. "In that case," he said, "it would set in the south-west." I suppose that even if you imagine all the heavenly bodies playing Puss in the Corner across the sky in that way you may still be able to hear them—

"For ever singing as they shine
The hand that made us is divine"—

but your notions of divinity must be equally individual.

Again, when another exceptionally brilliant classical scholar publishes a book in defence of orthodoxy, and in the course of a solemn statement of his implicit belief in the material nature of a recorded miracle employs the word "square" when he may be supposed to mean "cubic," one cannot but feel, even if he makes the correction in the second edition, that his notions of matter and space are not sufficiently conformed to the orthodoxy of science to make any views of his involving such material conceptions of importance to the ordinary man.

Could not the British Association come to some agreement as to the position of the main windows of the mind? Naturally A cannot be conscious of a window being closed in his own mind; he has never known what it was to have it open. But it is easy enough for A to see that B's window is shut upon A's favourite vista. And possibly every section of this Association from A to M might supply material for a museum of one-sidedness. The form of one-sidedness to which I have been alluding is probably uncommon in Australia. Education here is more likely to be deficient on the literary than on the scientific side. There is no good purpose to be served by vague general charges of too few sides, or too much of one. Let us recognise that in this imperfect empire of ours boys and men do not work at subjects which are distasteful to them merely to improve their minds. Let us be thankful if we find boys and men who have one subject which is really interesting to them, and at which they will work with a will. Another fact which must be accepted is that all the professions have their own requirements for what in their view constitutes a general education necessary and sufficient for their members. Again, the older universities (and Australia's connection with them is close enough for Australians to forgive me if I speak only of Oxford and Cambridge) are recasting their elementary examinations, let us hope with

wisdom, if not with science. The problem before them is again concerned with the average stupid boy or man. I want to leave him out of my objective. To prevent his coming in subjectively is, I fear, beyond my control. Further, I do not wish to say a word in criticism of professional education. To reverse the words of Browning,

"I want to know a butcher paints,
A baker rhymes for his pursuit."

I do not in the least want to know that my solicitor studies radio-activity or Bessel's functions. I should consider it an impertinence on my part. But when my member of Parliament votes himself 400*l.* a year at my expense, I say that I have a right to regard him as one of the civil service, and as such to ask him to pass a suitable examination. The public examination, or rather ordeal, which he has to pass is in its way a severe one. It tests certain qualities; but are we certain that the qualities which it tests are precisely those which are wanted in a business assembly? And, if not, what improvements are possible. Again, do the civil service examinations give us the civil servants we want? The problem becomes more important every day. New officials are continually being appointed, and red tape is spreading like a convolvulus. The administrative departments of our older public services have been meeting with severe criticism. The only branches which give general satisfaction appear to be those which require mathematical qualifications. When a good man is wanted for a tough job, it is remarkable that the Navy or the Engineers are usually called on to supply him.

It has been said that examinations afford no test of character. I doubt the truth of this. If I had to choose between an examination and a personal interview in appointing to an administrative post, I think I should set a mathematical paper rather than conduct a *visà voce*. Personality, and the power of managing one's fellows do not appear in either. But a mathematical examination may be made to indicate one of two things, either a mathematical brain, and its accompanying adaptability, or failing that, a quality of determination and power of work which are almost more valuable.

It is easy enough to understand the dissatisfaction so frequently expressed by trained business and professional men when they are brought up against incompetence on the part of Government officials appointed by examination in subjects unconnected with their official duties. It does not follow that such critics would approve the abolition of competitive examination for Government posts. What alternative is there not involving jobbery? But if we are to rely on examination results,

why should it be possible in any of these to avoid the one subject which does afford a fairly trustworthy test of capacity? We read that the subjects in which Joseph Chamberlain shone at school were mathematics and natural philosophy. Here is a solitary example. Take, however, any man who has shown himself capable of carrying through some complicated piece of work, on his own, be it understood, and not alone by judicious selection of helpers, and find out whether that man has or has not a turn for mathematics. Before competitive examination is condemned as a failure, let the experiment be tried of making mathematics a compulsory and crucial test. And the mathematics must represent some hard work.

In the universal tendency of the modern school to make things easy and pleasant for the learner, there has grown up an idea that mathematics can be made an easy subject. Perhaps the abolition of Euclid is responsible for this. If any good has followed this abolition, a point open to doubt, it is in the clearing of the ground for the approach to trigonometry and mechanics. If these subjects are more widely taught than formerly, it is because more boys are adopting professions requiring these subjects; but I believe it is true to say that the literary boy does less mathematics than he ever did, and finds the subject tedious and trivial. The dignity of Euclid used to impress boys of this class where the modern substitutes fail. The pass standard in mathematics is very low; and there is no inducement for able classical boys to push their mathematics beyond this standard. Your classical boy may or may not be a capable administrator. You cannot tell, because you have not tested his mathematical powers.

Classical men are themselves beginning to realise that a purely classical education is too narrow. Among a collection of special reports on the teaching of mathematics in the United Kingdom, made for and published by the Board of Education in England, is a paper on higher mathematics for the classical sixth, in which the writer describes a course of four hours a week devised for the benefit of those members of a classical sixth form for whom a classical scholarship examination was not imminent. They were boys who had done nothing but elementary work, and yet the writer is at pains to justify his praiseworthy effort to give them something more. The same effort may have been made in other English schools; but for the most part the vague aspirations of the classics for something not classical take the form of two hours a week of science. Now here is a problem which is of concern to us all. We have a number of clever boys—our future judges, legislators, bishops,

civil servants, schoolmasters. They can all of them solve x and y quadratics, but that is the extent of their mathematics. They all know something about Archimedes, and how to make a thermometer, and that is probably the extent of their scientific knowledge. Required a year's course of two hours a week which will open their eyes in the most efficacious manner. Remember also that it is the eyes and not the mouth that we wish to open. It is easy enough to provide physical marvels, with a result that a smart young man will talk about the failure of Newtonian philosophy, seeing that the mass of an electron is dependent on its velocity, without ever having formed a clear notion of what the Newtonian philosophy is. In the old Cambridge days a candidate for classical honours was required at least to know this; and it meant a good deal more than the elementary statics and dynamics which are required now, and for which you may substitute French. Consequently, mathematics has lost its status in a liberal education (so called). It is not a paying subject for an ambitious young man, or for one who wants a soft job. It is left for the workers, not for the talkers; and the workers for the most part require a more practical type of mathematics appealing more to the practical mind than to the æsthetic.

Once more I may say that the education of all people by whom we have to be governed or to whom we may be compelled to listen, is a matter which concerns us all. These people possess on the whole the æsthetic rather than the practical type of mind. If mathematics and science are to make any appeal to them, it must be in a different form from what they get now. They are taken a little way down a tunnel leading apparently nowhere, or coming out again like a rabbit's burrow on the same view as at the start. A boy begins to read Shakespeare; almost at once a new world opens to him. The æsthetic appeal comes at once. What other name may be placed beside Shakespeare's in our national history? Newton's at least, but the literary boy gets nothing of his national heritage from Newton; only one or two half-comic stories comparable with the tales of Shakespeare's poaching habits, or his will leaving his second-best bed to his wife. You cannot expect a boy to read the *Principia* with enthusiasm, or even with profit, although there has been no dispute about its authorship. Nobody has suggested that Clarendon or Samuel Pepys was its real author. What ought a boy to know of Newton? Even for him to appreciate the old stories of the apple, and the two holes in the oak door at Trinity, Cambridge, he must have his eyes open to Newton's real greatness: and that means

knowing of Kepler and Galileo, and the laws of motion, of the inverse square notion, of the arithmetical connection between gravity and the earth's pull on the moon, the proof of the law of elliptical motion, and of the attraction of a sphere. All this means real work—a journey through a long, and, in spite of all our recent efforts, a badly-lighted tunnel. Is this too much to demand of a clever boy? It will be very good for him if he survives; and if he is to be one of our rulers, he ought to be capable of surviving. But I fear compulsion is necessary. Boys, and in particular boys of the type alluded to, are not likely to take up a difficult subject which does not bear on their "examination"; and to impose such a test on all candidates for a matriculation or school-leaving examination would be an act of useless severity. It would not, however, be futile to make candidates for honours take it, as in the Cambridge additionals.

What useful purpose is served by the mechanics of that examination as at present constituted it is hard to see. For the scientific student it is unnecessary, and for the literary man unilluminating, because it does not go far enough. If he is not to obtain a real conception of Newtonian mechanics, he would be just as well off with plain arithmetic. All the familiar arguments against compulsory Greek can be used perhaps with greater force against compulsory algebra.

A general principle which I suppose all would accept is that when an examination in any subject is imposed as a guarantee of a liberal education, the test should be carried far enough to make it worth something. What has been said of mathematics would apply with equal force to examinations in science if these should ever become universal. For example, suppose that all candidates for honours are required to pass in heat and optics. The usual school-leaving examinations in these subjects omit altogether or attach little importance to the connection between heat and work, and to the evidence for the wave-theory. If a boy passes such an examination, he gives proof of having acquired a certain number of facts and formulæ, but not of having reached the new points of view which a more arduous course might have given him.

A new outlook, reached with effort—this is what every subject of study should afford if it is to be retained simply as part of a liberal education. If the outlook can be obtained without effort, popular books and lectures can provide it, and schools need not teach it.

Let me repeat the arguments for mathematics as a compulsory subject in public examinations. First, it is a better test of capacity

and adaptability than any other single subject. Secondly, if pursued far enough it gives a new outlook. I am not prepared to dogmatise in the same way about the study of science. A man who has been a schoolmaster for twenty-six years without a break is probably not best qualified to preach on the text of wideness of vision. A voyage such as that of the British Association to Australia is apt to induce a consciousness of the beam in one's own eye. It is possible, moreover, that the great experts in certain specialised branches may also be ill-qualified to estimate the merits of their own subject as compared with others. The question may perhaps in future times be settled by the psychologists when they have finished with the infant mind. The problem of the adolescent mind is more complicated. I seem to see three main tendencies drawing boys to science in general; a practical tendency towards engineering, which is commonest of all; a materialistic or perhaps humanistic tendency towards biology; and what I may call a mystical tendency towards pure physics. Sometimes a boy is led by two of these, in some rare instances by all three. Whether this idea is right or not, there is little doubt that the studies of engineering, biology, and physics develop different types of mind, and it should be possible for the school to provide opportunities for all. The mistake which is made is that we try to catch them too young. A clever boy of fourteen is more often than not good all round, and if he does his measuring and weighing and reading of thermometers intelligently and accurately we may be apt to acclaim him as a heaven-born physicist. It would probably be better for that boy if he were giving more time to the right sort of mathematics, and personally I am sorry our modern utilitarian efforts have crowded out from his curriculum astronomy and the physical basis of music.

To sum up, this paper pleads for a reconsideration of the curriculum in the education of the clever literary boy. First, it demands from him more mathematics, partly for his own good and partly as a test of his capacity for certain kinds of work. Secondly, it asks for him some definite training in science in the later stages of his school career. Finally, it recognises that the whole question is in practice one of examinations, a matter affecting the Civil Service Commission and the universities. In the interests of the public services it considers that mathematics should be a compulsory subject in examinations for public appointments; that if candidates for literary honours at our universities are required to pass a qualifying examination in mathematics, the

syllabus should include the elements of Newtonian mechanics; and that if an alternative is allowed, it should take the form of some branch of natural science, the serious study of which does not require a knowledge of mathematics.

PERSONAL PARAGRAPHS.

THE REV. H. COSTLEY WHITE, who, in 1910, succeeded the Rev. Dr. Gray as Warden of Bradfield College, has tendered his resignation to take effect at Christmas. Mr. White was educated at Malvern College and at Balliol College, Oxford, from which he went as a master to Sherborne School in 1901; from 1903 to 1910 Mr. White was a master at Rugby. He recently devised a scheme of commercial training for adoption at Bradfield by which public-school boys were to be prepared to take the place in the commercial world fitted to their status in the social world.

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MR. P. C. SANDS, the classical master at the City of London School, has been elected headmaster of Pocklington School. Mr. Sands was at Nottingham High School and St. John's College, Cambridge. He has been at the City of London School since 1906.

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LIEUTENANT L. A. FILLEUL, 3rd Battalion Somerset Light Infantry, was killed in action on October 21st. He graduated at Oxford in 1910 for Lincoln College, from which he went to Trent College. In 1908 to 1911 he rowed in his college eight. In September, 1911, he joined the staff of Monkton Combe School, Bath; in the same year he became a member of the Incorporated Association of Assistant-masters.

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LIEUTENANT B. M. R. DENNY, of the Special Reserve of the Liverpool Regiment, whose death from wounds received in action was reported under the date of October 29th, was educated at King's College, Taunton, and took his B.A. degree at London in 1909. Mr. Denny was a master at Borlase School, Marlow, at Warwick School, at Denstone College, and at Worksop College. He was to have joined the staff of King's School, Canterbury, this term, but volunteered for service at the outbreak of the war. At Worksop he held a commission in the school contingent of the O.T.C., and in May last he was appointed to a commission in the Special Reserve.

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AMONG the recipients of the V.C. is J. H. C. Draine, formerly a pupil at a truant school,

to which he was sent from a Council school at Barking.

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MR. W. T. TREGEAR, headmaster of the Secondary School, Sandown, has been appointed an inspector of elementary schools under the Board of Education. Mr. Tregear was formerly a master at the Whitechapel Foundation School under Mr. Carter and left there to go to Sandown, when the school at Sandown was first established. The school has become one of the chief centres of the life of the island, and Mr. Tregear will be much missed by his many friends; the schools he is about to inspect will gain a clear-sighted, sympathetic, and enthusiastic visitor of wide experience.

* * *

AMONG schoolmasters on active service none, perhaps, has had the experience that fell to the lot of Dr. S. G. Simpson, a Modern Language Master at the Royal Technical Institute, Salford. He joined the forces as lieutenant-interpreter at the commencement of the war; his own account of his experience appeared in the *Daily Mail*. "On Friday afternoon (November 6th) we were suddenly called up to support the Guards. We galloped over to the specified spot, dismounted, and advanced on foot. We took a prisoner, and I was told off to question him. This I did behind the shelter of a house. . . . Meanwhile the others went on, and happened to get between two houses where Maxims were concealed, with the result that all the officers were killed or wounded. I was the only survivor, and so the command of the squadron (of the Guards) devolved on me. The reserve officers have arrived to-day, so I am deposed. I am now attached to headquarters."

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THE relative merits of inviting applications for vacancies in schools through agencies and advertisement is being discussed in the correspondence columns of the A.M.A. An attack on the old-time profit-earning agency is easily understood and would doubtless be supported by the whole profession, but to condemn with them an agency managed by a committee of the profession for the advantage of its members is very like disloyalty.

* * *

MR. VIRGO, the Registrar of the Joint Agency, has had a unique experience of schools and schoolmasters; he was one of the earliest members of the Assistant-masters' Association, he was for many years its assistant secretary; he conducted on behalf of the association the agency work which was one

of the foundation-stones of the Joint Agency. Under him the Joint Agency has paid off the debts incurred in its early years, and has been placed on a sound financial basis.

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THE REV. R. D. BELOE, one of the house-masters of Winchester College, has been appointed headmaster of Bradfield College. Mr. Beloe was educated at Oundle and took his degree in history at Corpus Christi College, Cambridge, in 1890. He has been at Winchester since 1902 and was ordained in 1908.

ONLOOKER.

THE MOST NOTABLE SCHOOL BOOKS OF 1914.

THE compilation of the following lists of books published during 1914, or too late in 1913 for inclusion in the lists published in our issue of last January, has been entrusted to experienced teachers familiar with the needs of schools.

The compilers have had a free hand, and attention has not been confined to books reviewed in these columns.

Where the character of the volumes is not indicated sufficiently by the titles, a few explanatory notes have been added.

Modern Languages.

"Les Poètes Français du XIX^e Siècle." By Auguste Auzas. (Clarendon Press.) 3s. 6d.

"Défense de la Poésie Française, à l'usage des lecteurs anglais." By E. Legouis. (Hachette.) 6 fr.

"Histoire de la Langue Française." By F. Brunot. (Paris: Colin.) Tome iv., première partie. 18 fr.

This instalment deals with *la langue classique* (1660-1715).

"Historische Sprachlehre des Neuf Französischen." By Eugen Herzog. (Heidelberg: Winter.) 4s.

"L'Isochronisme dans le Vers Français." By P. Verrier. (Paris: Alcan.) 2 fr.

"Petit Recueil de Chants Français." By H. Carter. (Clarendon Press.) 4s. 6d. and 2s.

"Selections from Classical German Literature." By Klara Collitz. (New York: Oxford University Press.) 7s. 6d.

A judicious selection of texts from the period 1500 to 1800.

"A German Phonetic Reader." By Alfred Egan. (University of London Press.) 5s.

A varied selection, carefully transcribed.

"Psychologie der Sprachpädagogik." By Chr. B. Flagstad. (Leipzig: Teubner.) 5s.

A noteworthy book, translated from the Danish by the author.

Classics.

"C. Julii Caesaris Commentarii Rerum in Gallia Gestarum VII. A Hirti Commentarius VIII." Edited by T. Rice Holmes. 528 pp., 13 maps, and 7 illustrations. (Clarendon Press.) 8s. 6d. net.

"A New Latin Grammar, based on the Recommendations of the Joint Committee on Grammatical Terminology." By E. A. Sonnenschein. Second edition. 166 pp. (Clarendon Press.) 2s. 6d.

"The Acharnians of Aristophanes." By R. T. Elliott. xliii+241 pp. (Clarendon Press.) 14s. net.

"Roman Ideas of Deity." By W. Warde Fowler. vii+167 pp. (Macmillan.) 5s. net.

"Greek Philosophy." Part i., "Thales to Plato." By John Burnet. x+360 pp. (Macmillan.) 10s. net.

"A History of Greece." By J. B. Bury. New edition. xxv+909 pp. (Macmillan.) 8s. 6d.

"Clio Enthroned: A Study of Prose-Form in Thucydides." By Walter R. M. Lamb. xv+319 pp. (Cambridge University Press.) 10s. net.

"Livy." Book I.-V. Vol. i. Edited by R. S. Conway and C. F. Walters. Oxford text. (Clarendon Press.) 4s.

"The Teaching of Greek at the Perse School, Cambridge. 146 pp. Published for the Board of Education by Eyre and Spottiswoode.) 1s.

"Greek History for Schools." By C. D. Edmonds. xviii+330 pp. (Cambridge University Press.) 5s. net.

"Comment apprendre le Latin à nos fils." By J. Bezoul. 424 pp. (Paris: Librairie Viubert.) 3.50 fr.

"Noctes Latinae." By Walter Madeley. 174 pp. (Macmillan.) 1s. 6d.

"Pons Tironum." By R. B. Appleton and W. H. S. Jones. viii+108 pp. (Bell.) 1s.

English Language, Grammar, and Composition.

"A Short History of English." By H. C. Wylde. (Murray.) 6s. net.

For teachers: a thoroughly scientific and scholarly treatise on the sounds and the inflexions.

"English Grammar and Composition." Part iii. By E. A. Twentymen. (Rivingtons.) 2s. 6d.

Part iii., for the Middle School, follows the useful lines of the previous parts.

"English Composition." By R. S. Bate. (Bell.) 3s. 6d.

Intended for all stages: a very suitable book by an experienced teacher.

"Matriculation English Course." By J. C. Nesfield. (Macmillan.) 3s. 6d. "Key," 3s. 6d.

A handy volume for matriculation work: in the author's well-known style.

"The Short Modern Dictionary." (Macmillan.) 1s.

Compendious and comprehensive — containing exactly what the young pupil requires.

"The Romance of Names." By E. Weekley. (Murray.) 3s. 6d. net.

For the library: a scientific and fascinating study of several thousands of names.

"Précis Writing for Schools." By C. L. Thomson. (Horace Marshall.) 1s. 6d.

Excellent in every way.

"Précis Writing." By W. Murison. (Cambridge University Press.) Three parts, 2s. 6d., 3s., and 3s. 6d.

A progressive course for the public services.

History.**(1) FOR YOUNGER PUPILS.**

"A First Book of English History." By F. J. C. Hearnshaw. (Macmillan.) 1s. 6d.

"Heroines of European History." By A. R. H. Moncrieff. (Blackie.) 1s. 6d.

"The Threshold of History." By H. R. Hall. (Harrap.) 1s.

A description of the life of primitive men in the form of a tale.

"The Building of the British Empire." By E. M. Richardson. (Bell.) 1s. 6d.

(2) FOR TEACHERS AND OLDER PUPILS.

"A History of England and the British Empire." (In four volumes.) By A. D. Innes. (Rivingtons.) Vol. i., to 1485. Vol. ii., to 1688. Vol. iii., 1689-1802. 6s. net each.

"King's College Lectures on Colonial Problems." Edited by F. J. C. Hearnshaw. (Bell.) 4s. 6d. net.

"South Africa, 1486-1913." By A. W. Tilby. (Constable.) 7s. 6d. net.

"A Handbook of Pictorial History." By H. W. Donald. (Charles and Son.) 3s. 6d. net.

Reproductions of original pictures and articles, accompanied by comments.

"An Introduction to World History." By M. W. Keatinge and N. L. Frazer. (Black.) 2s.

"In Feudal Times." By E. M. Tappan. (Harrap.) 5s. net.

A description of social life of all kinds.

"The French Revolution." By H. P. Adams. (Methuen.) 3s. 6d. net.

"Political Thought in England from Bacon to Halifax." By G. P. Gooch. (Williams and Norgate.) 1s. net.

"Wars between England and America." By T. C. Smith. (Williams and Norgate.) 1s. net.

"History of Scotland." By R. S. Rait. (Williams and Norgate.) 1s. net.

"The Partition of Europe." By P. Guedalla. (Clarendon Press.) 4s. 6d.

A text-book of European history, 1715-1815.

Geography.

"The Oxford Survey of the British Empire." Edited by A. J. Herbertson and O. J. R. Howarth. 6 vols. Vol. i., The British Isles and Mediterranean Possessions; vol. ii., Asia; vol. iii., Africa; vol. iv., America; vol. v., Australasia; vol. vi., General Survey. (The Clarendon Press.) 70s. net.

A reference book which should serve as a standard authority.

"College Physiography." By R. S. Tarr. xxii+837 pp. (New York: The Macmillan Company.) 15s. net.

An exhaustive survey of our knowledge of the earth; indispensable as a reference book.

"A Junior Geography of the World." By B. C. Wallis. (Macmillan.) 2s. 6d.

Intermediate between the "First Book of General Geography" and "A Geography of the World," by the same author; well illustrated, plenty of exercises and questions; suitable for the Junior Locals.

"The Atlas Geographies." By T. Franklin, E. D. Griffiths, and E. R. Shearmur. Part II. The Junior Geography. 2s. 8d. net. Part III. The Senior Geography. No. 4. Africa. 1s. 6d. net. No. 1A. The British Isles. 1s. 10d. net. Part IV. Commercial Geography. 3s. net. (Johnston.)

A series of combined atlas and text-books; many exercises.

"Model Surveying Instruments: for Teaching Practical Geography in Schools." Prepared under the direction of E. A. Reeves, map curator to the Royal Geographical Society. Book of directions by J. Fairgrieve. (Philip.)

An excellent set of instruments, with a carefully planned book of directions.

"A Little Book on Map Projection." By Mary Adams. (Philip.) 2s.

Just the book on this subject for the teacher.

"Principles and Methods of Teaching Geography." By F. L. Holtz. (New York: The Macmillan Co.) 5s. net.

Well worth careful study by British teachers who will gain much from their detachment from the American point of view.

"Scenic Studies in the Bible Background." By S. M. Nicholls. (Longmans.) 3s. 6d. net.

Should be studied by all teachers who have any interest in the Holy Land.

"The Growth of Europe." By Grenville A. J. Cole. (The Home University Library.) (Williams and Norgate.) 1s. net.

Indispensable for physical geography.

"The World and its Discovery." By H. B. Wetherill. (The Oxford Geographies.) (The Clarendon Press.) 3s. 6d.

A stimulating supplementary book for middle and senior forms.

"Provincial Geographies of India: The Madras Presidency." By E. Thurston. (Cambridge University Press.) 3s. net.

The pioneer book of a welcome series; essential for teachers and the reference library.

Mathematics.

"The Groundwork of Arithmetic." By M. Punnett. xii+234 pp. (Longmans.) 3s. 6d. Exercises, Book I. 58 pp. 4d. Book II. 106 pp. 6d. Book III. 84 pp. 6d.

A very thorough discussion of matter and method.

"Outdoor and Indoor Experimental Arithmetics." Teacher's Book. By H. H. Goodacre, E. F. Holmes, C. F. Noble, and P. Steer. xii+377 pp. (Bell.) 3s. 6d. net.

An excellent course of the "practical" type.

"Arithmetic." By N. J. Chignall and W. E. Paterston. Part i., 320+xiv pp. Part ii., 276+xxvii pp. (Clarendon Press.) 2s. 6d. each.

Suitable for use in secondary schools. Part ii. deals with mensuration and commercial arithmetic.

"The Teaching of Algebra." By T. P. Nunn. xiv+616 pp. (Longmans.) 7s. 6d.

Discusses courses and methods of teaching algebra, trigonometry, and the elements of the calculus.

"The School Algebra." By A. G. Cracknell. vii + 568 + lxxvii pp. (Clive.) 5s.

"Exercises in Mathematics." By D. B. Mair. xi + 469 pp. (Macmillan.) 4s. 6d.

A collection of examples in arithmetic, geometry, algebra, trigonometry of the type set in the Civil Service Examinations.

"Elements of Geometry." By S. Barnard and J. M. Child. Parts i.-vi. ix + 465 + xxxviii pp. (Macmillan.) 4s. 6d.

"The result of eleven years' experience in teaching on the lines suggested by the Mathematical Association."

"Geometry: Theoretical and Practical." By A. H. Bell. viii + 12 pp. (Rivingtons.) 2s. 6d.

A good type of "modern" geometry.

"An Introduction to the Infinitesimal Calculus." By G. W. Caunt. xx + 568 pp. (Clarendon Press.) 12s.

"A School Statics." By G. W. Brewster and C. J. L. Wagstaff. viii + 248 pp. (Heffer.) 3s. net.

Follows the historical order of development.

"Dynamics." By H. Lamb. xi + 344 pp. (Cambridge University Press.) 10s. 6d. net.

An excellent treatise on analytical dynamics of one and two dimensions.

"Projective Geometry." By G. B. Mathews. xiv + 349 pp. (Longmans.) 5s.

"Practical Mathematics for Technical Students." By T. S. Usherwood and C. J. A. Trimble. Part i. 370 pp. (Macmillan.) 3s. 6d.

"Elementary Geometrical Optics." By A. S. Ramsey. xi + 173 pp. (Bell.) 6s.

Chemistry.

"A Manual of Practical Physical Chemistry." By F. W. Gray. (Macmillan.) 4s. 6d.

One of the best handbooks on the subject. Special attention is directed to accuracy of measurement.

"Chemical Calculations." By H. W. Bausor. (Clive.) Part i. 2s. Part ii. 1s.

A useful collection of problems.

"Industrial Chemistry for Engineering Students." By H. K. Benson. (New York: The Macmillan Co.) 8s. net.

Connects the lecture-room with the factory.

"An Introduction to the Study of Organic Chemistry." By H. J. Clarke. (Longmans.) 6s. 6d.

An excellent introduction, designed to meet the new syllabus of the Board of Education.

"A First Book of Chemistry." By W. A. Whitton (Macmillan.) 1s. 6d.

A sound introductory manual.

"An Introduction to Modern Organic Chemistry." By T. W. Mellor. (Longmans.) 4s. 6d.

An inspiring text-book for schools, based on the author's well-known "Modern Inorganic Chemistry."

BOOKS SUITABLE FOR THE TEACHER.

"Synthetic use of Metals in Organic Chemistry." By A. J. Hale. (Churchill.) 4s. 6d.

"A Third Year Organic Chemistry." By T. P. Hilditch. (Methuen.) 6s.

Deals with terpenes, heterocyclic compounds, and sugars with Teutonic thoroughness.

"Chemistry of the Radio-Elements." By F. Soddy. (Longmans.) 4s. 6d.

"Les Classiques de la Science." (Paris: A. Colin.) 1.30 fr.

Original papers of Gerhardt, Dumas, Ampère, Avogadro, Gay Lussac, and Stas.

"Methods of Quantitative Organic Analysis." By Kingscott and Knight. (Longmans.) 6s. 6d. net.

Physics.

"A Text-book of Physics." Electricity and Magnetism. Parts i and ii. (Static Electricity and Magnetism.) By Prof. J. H. Poynting and Sir J. J. Thomson. (Griffin.) 10s. 6d.

The fourth volume of a well-known standard text-book.

"X-Rays." By G. W. C. Kaye. (Longmans.) 5s. net.

A complete and trustworthy volume.

"Sound." By J. W. Capstick. (Cambridge University Press.) 4s. 6d.

A good elementary text-book for students, and containing chapters particularly useful to students of music.

"Wireless Telegraphy, and Telephony without Wires." By C. R. Gibson. (Seeley, Service.) 2s. net.

"Practical Applied Physics." By H. Stanley. (Methuen.) 3s.

"Incandescent Electric Lamps." By D. H. Ogley. (Longmans.) 2s. 6d. net.

An informative book on lamps and illumination.

Botany and Nature Study.

General.

"The Elementary Principles of General Biology." By James Francis Abbott. (New York: The Macmillan Co.) 6s. 6d. net.

A clear statement of the more important generalisations. Provides a useful "background" to laboratory courses.

"The Teacher's Handbook to Exercises in Nature Study." (Nisbet.) 1s. 6d. net.

Notes and answers to questions in pupils' books (Nisbet's "Exercises in Nature Study").

"Nature in Books." By J. Logie Robertson. (Oxford University Press.) 2s.

Extracts, chiefly from classical English nature-literature, with explanatory notes and exercises.

Plants.

"An Introduction to the Study of Plants." By F. E. Fritsch and E. J. Salisbury. (Bell.) 4s. 6d. net.

Within its scope (slightly beyond matriculation syllabus), one of the best books published.

"Plants and their Uses." By Fredk. Leroy Sargent. (Constable.) 5s. net.

Botany from the economic point of view. Excellent for reference.

"Genera of British Plants." By Humphrey G. Carter. (Cambridge University Press.) 4s. net.

Gives characters of genera of vascular plants, which are arranged according to Engler's syllabus.

"A First School Botany." By E. M. Goddard. (Mills and Boon.) 2s. 6d.

Sound, but without any very novel features.

"A Text Book on Experimental Plant Physiology." By M. Rollo Mitchell. (Meiklejohn). 1s. net.

Suitable for pupils preparing for Cambridge and Oxford Local Examinations.

"Wonders of Plant Life." By F. M. and L. T. Duncan. (Frowde, Hodder and Stoughton).

Six small books (80 pp. each); good readers for lower forms.

Animals.

"Pond Problems." By E. E. Unwin. (Cambridge University Press.) 2s. net.

A good school course on the natural history of fresh-water insects.

"Bird Studies." By W. P. Westell. (Cambridge University Press.) 2s. 6d. net.

Twenty-four lessons arranged in order of seasons.

"Common British Beetles." By Rev. Chas. A. Hall. (Black.) 1s. 6d. net.

Good descriptions and coloured illustrations of the larger species.

OXFORD UNIVERSITY LOCAL EXAMINATIONS.

SET SUBJECTS FOR 1916.

Preliminary (July and December).

Religious Knowledge.—(a) Joshua (i.-xi., xxiii.-xxiv.); (b) St. Mark; (c) Acts (xv. 36-xxviii.); (d) the Church Catechism.

History.—(a) Ancient History as treated in "Outlines of Greek and Roman History, by M. A. Hamilton, pp. 1-133 (Clarendon Press); (b) English History, either (A) the Outlines from 55 B.C. to 1399 A.D.; or (B) the Outlines from 1399 to 1714; or (C) the Outlines from 1689 to 1837. (Candidates will have an opportunity of showing knowledge of the outlines of English History outside the period which they select.)

English.—(b) Kingsley, "Heroes" (Clarendon Press); (c) Scott, "Ivanhoe"; (d) either (a) "A Book of Verse for Boys and Girls," parts i., ii., compiled by J. C. Smith (Clarendon Press); or (β) Longfellow, "Hiawatha," and "Evangeline."

Geography.—(iii) Candidates must have a general knowledge of (i) the meaning and use of large-scale and small-scale maps and of common geographical terms; (ii) the importance of such factors as position on the earth's surface, outline, distribution of mountains and rivers, and climate, in the geography of a region; (iii) the geography of one of the following: (A) England and Wales; (B) Scotland and Ireland (C) Canada.

Latin.—"Selections from Cicero," by W. D. Lowe (Clarendon Press).

Greek.—"First Greek Reading Book," by A. Sidgwick, Ex. 1-50 (Rivingtons).

French.—"Madame Thérèse," by Erckmann-Chatrion (Clarendon Press.)

German.—"Wieland der Schmied," ed. Wilson (Clarendon Press).

Junior (March, July, and December).

Religious Knowledge.—(a) Old Testament History, from the election of Saul to the captivity of Israel; (b) Joshua i.-xii., xxiii.-xxiv; (c) St. Mark; (d) Acts xiii.-end; (e) Prayer Book (comprising the Church Catechism, the Morning and Evening Services, and the Litany).

History.—(a) Greek History, Outlines from 594 to 445 B.C.; (b) Roman History, Outlines from 146 B.C. to 14 A.D.; (c) English History. Candidates may offer either (i) or (ii) or both (i) and (ii). (i) Either (A) Outlines from 55 B.C. to 1135 A.D.; or (B) Outlines from 1066 to 1485; or (C) Outlines from 1485 to 1714; or (D) Outlines from 1689 to 1837. (ii) General Outlines of English History from 1603 to 1901 (E Paper). (d) General History, from 1715 to 1816 (F Paper). (e) Foreign History. The Outlines of General European History from 1802 to 1878.

English Language and Literature.—(b) Shakespeare, "Tempest," with Coleridge, "Ancient Mariner," and Byron, "Childe Harold," IV.; (c) either Shakespeare, "Macbeth" and "Henry V."; or Shakespeare, "Merchant of Venice"; (d) Shakespeare, "Much Ado About Nothing"; (e) Milton, "Paradise Lost," Book III., with Macaulay's "Essay on Milton"; (f) Scott, "Rob Roy"; (g) "Selections from Malory," ed. H. Wragg (Clarendon Press), with Scott, "Ivanhoe"; (h) Burke, "Reflections on the Revolution in France"; (i) Tennyson, Poems in "Select English Classics," ed. Quiller-Couch (Clarendon Press), with Scott, "The Lay of the Last Minstrel"; (j) Kingsley, "Hereward the Wake"; (k) Stevenson, "Kidnapped"; (l) "The English Parnassus," by Dixon and Grierson, pp. 270-434, 528-625 (Clarendon Press); (m) "A Book of Verse for Boys and Girls," parts i., ii., iii., compiled by J. C. Smith (Clarendon Press); (n) Lamb, Gray, Boswell, Sonnets (Milton and Wordsworth), in "Select English Classics," ed. by A. Quiller-Couch (Clarendon Press).

Geography.—(i) The Principles of Geography, (ii) British Isles, (iii) one of (A) Central Europe, (B) Africa south of the Sahara, (C) the Mississippi basin.

Latin.—Cæsar, De Bello Gallico, II.; Ovid, Stories from the Metamorphoses, ed. Slater (Clarendon Press)

Greek.—The Wars of Greece and Persia, ed. W. D. Lowe, lines 1-1207 (Clarendon Press), together with Xenophon, Anabasis, III., chaps. i.-iii.

French.—Erckmann-Chatrion, "Histoire d'un homme du peuple."

German.—Hein, "Auswahl deutscher Prosa der Gegenwart," pp. 1-98, 142-58 (Clarendon Press).

Senior (March, July, and December).

Religious Knowledge.—(a) Old Testament History, from the accession of Jehu to the death of Hezekiah (to be studied in connection with the Books of Kings and the Prophecies of Hosea, Amos, and Isaiah i.-xxxv.); (b) Joshua i.-xii., xxii.-xxiv., with Judges i.-xii.; (c) St. Mark; (d) Acts xiii.-end; (e) The Epistle to the Galatians; (f) the Epistle to the Galatians in Greek, including the subject-matter; (g) Church History, the History of the Christian Church from the arrival of St. Paul in Rome to the end of the third century; (h) Kirkpatrick, "The Doctrine of

the Prophets," Lectures i.-vii. (Macmillan); (i) Prayer Book (the Church Catechism, full text and explanations, with the Offices of Baptism and Confirmation in the Book of Common Prayer).

History.—(a) Greek History, the Outlines of Greek History from 594 to 445 B.C., with special questions on the Ionic Revolt and the Persian Wars; (b) Roman History, the Outlines of Roman History from 146 B.C. to 14 A.D., with special questions on the careers of Pompey and Julius Cæsar; (c) English History. Candidates may offer *either* (i) or (ii) *or* both (i) and (ii). (i) *Either* (A) from 55 B.C. to 1135 A.D.; *or* (B) from 1042-1485; *or* (C) from 1399-1714; *or* (D) from 1603-1815; *or* (E) from 1680-1880. (ii) The Outlines of English History, from the Anglo-Saxon Conquest to 1837. (d) General History. Candidates may offer one or both of the following periods: (G) from 1066-1516; (H) from 1715-1816. (e) Foreign History, the Outlines of General European History from 1802-1878.

English Language and Literature.—(b) General Literature. A large choice of questions will be given. (c) Chaucer, "Prologue" and "Knight's Tale," with Selections from Malory, ed. H. Wragg (Clarendon Press), and Scott, "Ivanhoe"; (d) Shakespeare, "Hamlet," "King Lear," and "Twelfth Night"; (e) Shakespeare, "Tempest," with Coleridge, "Ancient Mariner," and Byron, "Childe Harold," III., IV.; (f) Tennyson, "Ulysses," "Tithonus," "Oenone," "Death of Oenone," "Tiresias," "Lotus Eaters," with Arnold, "Merope," and Euripides, "Medea," trans. by G. Murray (Allen); (g) Shakespeare, "Much Ado about Nothing," with "The Oxford Treasury of English Literature," by G. E. and W. H. Hadow, vol. ii., pp. 153-286 (Clarendon Press); (h) Shakespeare, "As You Like It," with Tennyson, "The Princess"; (i) Marlowe, "Dr. Faustus," with Goethe, Faust, Part I. (World's Classics); (j) Bacon, Essays 1-40, and "The New Atlantis," with Macaulay's Essay on Bacon; (k) Milton, "Areopagitica" and "Samson Agonistes," with Macaulay's Essay on Milton; (l) Gray, Poems (1768: Oxford reprint), with Pope, "Essay on Criticism" and "Essay on Man"; (m) *either* Johnson, a General Paper will be set on the life and works of this author; *or* Landor, "Imaginary Conversations" (Selection ed. Cavenagh, Clarendon Press), with Lowell, "Fireside Travels"; (n) Scott, "Lay of the Last Minstrel" and "The Talisman"; (o) Carlyle, "Sartor Resartus," with Clough, Poems, in "Oxford Plain Texts" (Clarendon Press); (p) Eliot, "The Mill on the Floss"; (q) Reade, "The Cloister and the Hearth"; (r) Browning, Poems (Oxford Edition), pp. 25 ("Home Thoughts")-37, 75-103 (omitting "Johannes Agricola," "The Heretic's Tragedy"), 164-190; (s) Meredith, "Evan Harrington."

Geography.—(i) The Principles of Geography; (ii) British Empire; (iii) *one* of (A) Europe, (B) Africa, (C) North America (including the West Indies).

Latin.—Virgil, Aeneid, II., III. (1-288); Cæsar, De Bello Gallico, I. (i.-xxxiii only), II.; Cicero, de Amicitia.

Greek.—Xenophon, Anabasis, IV., vi-end, V.; Sophocles, Scenes from Ajax (ed. Laurence, Clarendon Press).

CAMBRIDGE UNIVERSITY LOCAL EXAMINATIONS.

SET SUBJECTS FOR JULY AND DECEMBER, 1916.

RELIGIOUS KNOWLEDGE:—Preliminary.—(a) St. Mark; *or* (for Jewish students) 2 Samuel v.-xx.; (b) Judges i.-xii.; (c) the Church Catechism.

Juniors.—(a) St. Mark: *or* (for Jewish students) 2 Samuel; (b) Joshua i.-xii., xxii.-xxiv., Judges i.-xii.; (c) the Acts of the Apostles xiii.-xxviii.; (d) the Church Catechism, and Morning and Evening Prayer in the Book of Common Prayer.

Seniors.—(a) St. Mark; *or* (for Jewish students) 2 Samuel; (b) the Acts of the Apostles xiii.-xxviii.; (c) Joshua i.-xii., xxii.-xxiv., Judges i.-xii.; (d) Galatians; (e) the Litany and the Offices for Communion, Baptism, and Confirmation; (f) the Church Catechism, and the Offices for Baptism and Confirmation in the Book of Common Prayer.

ENGLISH LANGUAGE AND LITERATURE:—Preliminary.—(c) Macaulay, "Horatius," "Lake Regillus," "The Armada"; (d) Perry, "The Boy's Odyssey."

Juniors.—(b) Shakespeare, "Julius Cæsar"; (c) Dickens, "A Tale of Two Cities"; (d) "Select Poems of Tennyson," i.-xx. and xxv. (ed. George and Hadow); (e) a paper of questions of a general, not a detailed, character on "The Coverley Papers from the Spectator" (Macmillan), and Goldsmith, "The Traveller" and "The Deserted Village."

Seniors.—(b) Shakespeare, "Julius Cæsar"; (c) Chaucer, "Prologue" and "The Nonne Prestes Tale"; (d) a paper of questions of a general, not a detailed, character on any *three* of the four following books:—Shakespeare, "Macbeth"; "Poems by Wordsworth" (Cambridge University Press); Bacon, "Essays," xxix.-xlvi.; Burke, "Speeches on American Taxation and Conciliation with America."

HISTORY, GEOGRAPHY, ETC.:—Preliminary.—History of England. The paper will consist of three Sections on the periods (a) 1066 to 1485, (b) 1485 to 1688, (c) 1688 to 1815 respectively. Candidates may if they wish select questions from all three of the Sections, or may confine themselves to two or one of them.

Geography. The British Isles; and general Geography.

Juniors.—(a) History of England. The paper will consist of three Sections on the periods (a) 1066 to 1485, (b) 1485 to 1688, (c) 1688 to 1832 respectively. Candidates may if they wish select questions from all three of the Sections, or may confine themselves to two or one of them. (b) Outlines of the History of the British Empire from A.D. 1492 to A.D. 1784. (c) Outlines of Roman History from A.D. 37 to A.D. 117.

(d) Geography. Outlines of Physical Geography, and the British Isles, with one of the following regions: (i) Europe, (ii) Asia, (iii) Africa.

Seniors.—(a) History of England. The paper will consist of three Sections on the periods (a) 55 B.C. to 1485 A.D., (b) 1485 to 1714, (c) 1714 to 1867 respectively. Candidates may if they wish select questions from all three of the Sections, or may confine themselves to two or one of them. (b) History of the British Empire from A.D. 1492 to A.D. 1784. (c) Out-

lines of Modern European History A.D. 1815-1878, with questions on the most important events in the periods 1789-1814 and 1879-1910. (d) Roman History from A.D. 37 to A.D. 117.

(e) Geography. The Principles of Physical Geography and one of the following regions: (i) Europe (including the British Isles), (ii) Asia, (iii) Africa.

LATIN:—*Preliminary*.—"Cæsar's Helvetic War" (Welch and Duffield).

Juniors.—(a) Cæsar, "De Bello Gallico," VII., 1-33; (b) Cæsar, "De Bello Gallico," VII., 34-67; (c) Virgil, "Aeneid," XII., 1-499; (d) Virgil, "Aeneid," XII., 440-950. Any two of these four to be taken.

Seniors.—Cicero, "Pro Milone"; or Tacitus, "Histories," I.; Virgil, "Aeneid," XII.; or Plautus, "Captivi."

GREEK:—*Juniors*.—(a) Xenophon, "Anabasis," III., 1, 2; (b) Xenophon, "Anabasis," III., 3-5; (c) Euripides, "Iphigenia in Aulis," 1-750 (omitting lines 1-48, 164-302, 543-606); (d) Euripides, "Iphigenia in Aulis," 801-1474 (omitting lines 1036-1097, 1279-1335). Any two of these four to be taken.

Seniors.—Thucydides, VII., 1-54; or Plato, "Apology"; or Homer, "Iliad," VI., VII., 1-312; or Euripides, "Iphigenia in Aulis."

HISTORY AND CURRENT EVENTS.

THE war which Great Britain and her Allies are waging against Germany and Austria is certainly unprecedented in history. We have not space to dwell on more than two or three of its features, and one of the most remarkable is the struggle in the north of France and in Flanders. There for now more than two months armies have faced each other over a length of 250 miles. Battles, in the old sense of that word, there are few or none. There are struggles for the Aisne or the Yser, towns are bombarded to ruins, trenches are won or lost, but the whole presents the phenomenon of a siege, not of a town, but of a country. The fighting is incessant, now at one point, now at another, and there is no rest for the fighters night or day. We turn in vain for a parallel to this even in Napoleon's greatest campaigns. He marched and fought pitched battles, but his soldiers had intervals in the fighting; once even they said he was winning victories with their legs rather than with their arms. The nearest parallel we can find is the maintenance of those walls in the north of Britain which the Romans constantly guarded against Caledonians of various kinds.

WE hear something daily of this long siege of France and of the vain endeavours of the Germans to win their way towards Calais. But of the naval operations we hear little. That, according to the teaching of Admiral Mahan, who has recently passed away, and of his followers is as it should be. A naval battle is a failure on the part of the stronger Power. It has failed to retain the enemy's forces within his ports, and losses must be incurred on both sides. Here we can more easily find parallels in the history of past wars. Not in the ordinary text-books

written for our pupils, which tell only of glorious victories and of destruction of the enemy's fleet, but in the larger histories of the wars of a hundred years ago we may read of month-long watchings outside the enemy's ports, watchings which effectually guarded British shipping and gave to this island then what we are enjoying to-day—a supply of food and other necessities for our industry. Only when *Emdens* and *Scharnhorsts* are captured or destroyed do we realise the importance of our generally silent fleet.

WAS it of the Crimean War of 1854-6 or of the diplomatic struggle of 1878 when Lord Beaconsfield brought "peace with honour" back from Berlin that the late Lord Salisbury said "we put our money on the wrong horse"? It has always been the policy of one or other European Power to maintain Turkey against either Austria or Russia. In the sixteenth and seventeenth centuries it was France, later England has at times also maintained a similar policy, a policy popularly voiced in 1878 in the Jingo song of that year with its refrain, "The Russians shall not take Constantinople." How great a revolution this war has made in Europe may partly be measured by the fact that when recently Turkey, at the instigation of Germany, declared war against Russia, Great Britain immediately declared war against Turkey, and the two Powers are jointly working towards the destruction of that ancient oppressor of Christian nations.

WE have often read in our history text-books a chapter headed the Dictatorship of Pitt, in which is described the suppression of liberty during the war against the French Revolution. We also know of the various theories promulgated among us during the last century by Socialists and Collectivists, and some of us have regarded with alarm the growth of these theories and of the various measures—Acts of Parliament—they have inspired. English opinion has generally been opposed to State action unless the absolute necessity for interference with individual liberty is proved. But now, in the stress of war, we have seen measures taken by the Government in the interests of the community which consist of pushing, almost to the extreme, both Pitt's policy and that of the Socialists. Goods (e.g. sugar) have been purchased by the Government which individual enterprise could not have obtained, and by the Defence of the Realm Act, passed in the recent short session of Parliament, powers have been given to the Government which may be realised by any of us at any moment. We are beginning to understand our history as never before.

Preparations and Exercises in Inorganic Chemistry. By W. Lowson. 128 pp. (Methuen.) 2s. 6d.—Prof. Smithells, in an introductory foreword, points out that Mr. Lowson's little manual is designed to meet the needs of junior university students. The preparations are consequently of a very elementary nature, and would be equally suitable for the middle forms in secondary schools. The book would have been very much more useful if some advanced work had been included and an attempt thereby made to fill a very discreditable gap in our English chemical literature.

ITEMS OF INTEREST.

GENERAL.

THE immense number of men now under military training in this country has given rise to new though temporary social problems in the districts in which the training is being carried out. The need, for example, of such forms of instruction as may beneficially employ the men's leisure has been widely expressed, and we are glad to see that the Board of Education has come forward with help in this direction. In cases in which the regulations for technical schools do not apply, the Board offers special grants to local authorities, in aid of the instruction of the men in such subjects as geography and history illustrative of the war, topography and mapping, first aid and ambulance, foreign languages, singing, field cookery, and simple crafts. Illustrated popular lectures and tutorial assistance for backward students in easy composition and arithmetic also come within the scope of these temporary regulations. The local authorities and the teachers are not to be hampered by a minute system of registration of attendance; it will be enough if a record of the periods of instruction is kept, with the number of students present during each period. The total grant is not to exceed two-thirds of the cost of the instruction, and is to range between 2s. 6d. and 5s. for each period of instruction.

In an article which appeared in our October issue reviewing the effects of the war upon schools and teachers, reference was made to Circular 863 of the Board of Education, and the suggestion was made that the Board's treatment of training-college students on military service would require revision. We are glad to see that a Supplementary Circular (No. 878) treats the students in question much more favourably. The only consolation offered them in the first Circular was that if they returned to the college in January (a most improbable contingency) the term they had missed should count as part of the period of training. The new ruling provides that a second or third year student who is on service may either return to college later and complete the normal period of training, or, having served with the colours for a year, may be granted temporary recognition as a trained certificated teacher, such recognition to be made permanent after a period not exceeding two years, provided favourable reports be received from the inspector and the local authority. Similar treatment will be accorded to first year men who shall complete a year's training next summer. The tone of the Circular is most sympathetic, and does great credit to all concerned in its production.

AMONG many other results of the war, there is now a great shortage of properly trained waiters. Probably no other calling in this country has been so much monopolised by foreigners. The Higher Education Sub-Committee of the London Education Committee has been considering the matter. The Day School for Waiters at the Westminster Technical Institute is already training boys for this profession; but, of course, the number which can be trained in the school each year, viz., twenty-four, will not meet

the demands which have now arisen. To overcome the temporary difficulties with which they have been faced, a large number of hotel and restaurant proprietors are engaging boys from fourteen years of age and upwards as waiter apprentices. The London Education Committee proposes that the work of the School for Waiters shall be supplemented by the establishment of part-time classes for boys who are engaged in hotels and restaurants as waiter apprentices. It has been arranged that attendance shall be made on three afternoons a week, twice for technical training and once for technical French, and that the period of training shall be for not less than one year. It is expected that about forty-eight boys will attend during the first year.

THE third annual conference of Educational Associations will be held as usual in the University of London, Imperial Institute Road, London, S.W., during the week beginning January 4th, 1915. The opening address will be given by Bishop Welldon on the afternoon of January 4th, and during the week fifteen educational associations have arranged about thirty other meetings. There will be an extensive publishers' exhibition in the East Gallery of the University buildings. On account of the national crisis several of the associations represented on the committee are unable to organise meetings, but members of all of them will be welcome to any of the open meetings.

THE annual meeting of the Geographical Association will be held on January 7th, 1915, in the Jehangier Hall, at the University of London, South Kensington. At 11 a.m. a lecture on some aspects of the Geography of China will be delivered by Mr. P. M. Roxby; at 12 a discussion will begin on the value of surveying in teaching geography, to be opened by Messrs. E. Young and J. A. White. The presidential address will be given at 2.30 p.m. by Mr. Hilaire Belloc, and this will be followed by a discussion on the place of map tests in examinations, to be opened by Dr. J. F. Unstead and the Rev. W. J. Barton.

THE annual meeting of the Historical Association will be held at University College, Gower Street, London, W.C., on January 8th and 9th, 1915. The annual address will be delivered by Prof. Pollard, on rumour and historical science in time of war, at 5.30 p.m. on the first day. On the second day the sitting will begin at 10.30 a.m., and papers will be read by Mr. R. W. Seton-Watson, on the Austro-Serbian dispute, and by Mr. J. W. Headlam, on history and patriotism. The report of the association for the year ended on June 30th, 1914, shows the number of members is now 1,223, and that an excellent year's work was accomplished.

A FRENCH correspondent sends further details regarding the effects of the war on education in France. At the Sorbonne, there are very few male French students, they are either young, or those who have not been accepted for military service; the other men students are foreigners, Rumanians, Poles, etc. At the Ecole Normale Supérieure there are only

twenty-five students instead of the usual 400. The casualties have been very heavy among both students and professors. The numbers of the pupils in the Paris lycées have increased enormously; a master who had a class of twelve in October last, now has forty or forty-five. The influx is due in part to boys from the invaded cities of Belgium or France. In the State secondary schools for girls, the pupils are ordered to bring their knitting and work while the others say their lessons to the teacher.

THE annual report for the session 1913-14 of the National Home-Reading Union shows that the society has been doing useful work for twenty-five years. It is noteworthy that the two sections which have shown the most encouraging results are the young people's and the introductory. A large proportion of the young people's membership consists of school reading circles, more than 1,200 of which (embracing from 70,000 to 80,000 children) are in schools under the London County Council. The Book Union has been well used, about eighty books having been lent and borrowed by members. The activities of the branches have been steadily maintained, and in South Africa and Australia the work makes progress. Bolton's record of membership shows an increase of 50 per cent., and other branches showing an increase are Birmingham, Leeds, and Liverpool. Full particulars of the work of the union may be obtained from the secretary, Miss J. Gauntlett, 12 York Buildings, Adelphi, London, W.C.

IN addition to the papers announced in the first issue of the Regulations for the Cambridge Local Examinations, July and December, 1915, a paper will be set for seniors on the outlines of modern European history, 1815-75 A.D., including questions on the most important events in the periods 1789-1814 and 1872-1900. Teachers are recommended to consult the Board of Education's Circular, No. 869, reprinted in the issue of THE SCHOOL WORLD for November, 1914, as to the treatment of the subject.

IN October and November last the National Froebel Union held for the first time the examination for the award of the newly established diploma for persons engaged in the training of teachers. Four candidates were successful.

TO the enthusiastic spelling reformer the appearance of a rational spelling in a Government publication will seem like the thin end of the wedge. Yet this thin end has been actually inserted by no less an authority than the directors of the Civil Service Commissioners in the examination paper for female typists. Instead of the usual dictation test, candidates are given a passage in orthography deviating but slightly from the simplified spelling system, and this they are expected to turn into ordinary spelling. It is a compliment to the Simplified Spelling Society that its alphabet should be recognised by the Government. One or two slight differences there are; for example, digraphs are used for the long vowels, and diphthongs are ligatured or tied together. The consonants are identical with the simplified spelling system.

A GREAT many small improvements must be made in a somewhat complicated piece of mechanism like the kinematograph in order that full value may be obtained from it, and the problem of how to use it in school is not yet solved. The Filmscope is the latest instrument to be put on the market with distinctive features which may aid in the solution of the problem. It is like the Pathéscope in that the source of light is a small electric filament lamp, in this case of eight-candle power, but it has an advantage over that instrument in that it takes full-sized films. The Filmscope, too, can either be run off the lighting circuit, in which case an ordinary lamp is used as resistance, or, as in the case of the Pathéscope, it may be made to supply its own light by the introduction of a small dynamo. Of course, the resulting picture is not of large size, but it is quite large enough for most class-rooms. The instrument is also fitted with another device which possibly may be of considerable importance; by means of this device the film may be stopped and started from a distance, and it is claimed that a stationary picture may be examined for a considerable time without difficulty. The price is eight guineas.

THE private student unable to enter a college, and anxious to graduate at the University of London, cannot do better than procure a copy of the "London University Guide and University Correspondence College Calendar, 1915," which can be obtained gratis from Burlington House, Cambridge, or 32 Red Lion Square, Holborn, London, W.C. He will find here just the guidance he requires. The tutors of the college are experts in clearing up difficulties, and no student who follows their instructions and has the necessary industry need anticipate failure in the successive ordeals to which the graduate must submit.

THE December Cambridge Local Examinations were held at 213 centres in the United Kingdom and the Colonies. There were 14,707 candidates, of whom 194 were entered for the Higher, 5,032 for the Senior, 6,177 for the Junior, and 3,304 for the Preliminary examination. Of the Colonial centres eighteen were in India, six in Ceylon, five in the Straits Settlements and Malay States, nine in South and West Africa, twelve in the West Indies; there were also centres at Bermuda, Buenos Aires, Belize, Mauritius, and Shanghai.

A COPY of the report of the United States Commissioner of Education for the year ended June 30, 1913, has reached us from Washington. It consists of two large volumes which contain information on every grade of educational work in the United States. The statistics collected and arranged by the Bureau of Education over which the Commissioner presides make it possible for the student of education to appreciate the remarkable educational growth in the States during recent years. Secondary schools in America are known as high schools and within the year reviewed by the report the number of such schools, public and private, increased 2.9 per cent., and the number of high-school pupils increased 4.45 per cent. The total number of high schools reported to the bureau was 13,445, the number of teachers in them 27,092, and the number of pupils 1,283,000.

REFERRING to the position of private schools in America, the director of the School of Education in the University of Chicago, who contributes a chapter to the report, says that the growth of public secondary schools led during the past decade to the abandonment of many private and endowed schools in the United States, which had been centres of secondary education. There is evidence that a new era of private-school development is at hand. A private school is often more at liberty than a public school to make radical experiments and to emphasise special forms of training. The difficulty of securing accurate information regarding private schools makes it impossible to assert with assurance, the director says, how far these schools are flourishing. There appears to be an increase in the number of private schools in the States, and this is doubtless aided by the growth of wealth among patrons who desire for their children either more exclusive associations or closer personal supervision.

THE Commissioner also refers to the salaries of teachers in American schools. As yet, he says, the teacher is the poorest paid servant of society. The annual average salary of teachers in the elementary and secondary schools of the United States in city and country is £98.32—for men £123.37, for women £91.70. It is not to be expected, he says, that teachers of the right kind can be secured for less than the wages of a washerwoman, less by half than the wages of a mail carrier, and less by two-thirds than the wages of a carpenter, a bricklayer, or a plumber. Educationists here will endorse what the Commissioner states: "We profess to believe in education and talk of our teachers as the standing army of the Republic, and of our school-houses as the fortifications which hold back the invasions of ignorance, vice, anarchy, and economic inefficiency, but the salaries of teachers are criminally low, and the sum total of expenditure for schools pitifully and absurdly small."

WE observe that the November number of the *Educational Review*, the leading educational periodical of the United States, is first and foremost a war number, about one-half of the space being devoted to articles on various aspects of the war. First comes Prof. Harnack's address to the German-Americans of Berlin, an address in which he represents Germany, America, and England as the guardians of Western civilisation, and proceeds to "cover up his head" at the sight of England's treachery. Then follows a series of six articles reprinted from the *Times*, putting the other side of the case, and emphasising in particular the responsibility of academic Germany. The influence on educated Germans of Treitschke's "New Barbarism" is described, whilst Nietzsche is declared to be not so black as he has been painted. Finally, we have President N. M. Butler's impressive utterance at the opening exercises of the academic year at Columbia University. He notes that the old claim that war is a training school for the manly virtues is now in a state of eclipse, "every combatant alleging that he is on the defensive, and summoning his fellow-countrymen who are scientists and philosophers to find some way to prove it"

THE Oxford pamphlets dealing with topics relating to the war which during the past four months have been issued periodically by the Oxford University Press, are now published in more permanent form in the shape of five small volumes bound in boards. Each volume contains five pamphlets, and each is sold at the price of 1s. net. Uniform with this series is also issued a collection of thirteen articles on "The Coming of the War," contributed to the *Morning Post*, between the dates July 27th and September 15th last, by Mr. Spencer Wilkinson. The early articles, written during the diplomatic crisis which preceded the war, are of permanent value as statements of British policy.

SCOTTISH.

THE official Report on Secondary Education in Scotland for the year 1914 has now been issued by the Secretary of the Scotch Education Department. Like its recent predecessors, it is a document of entrancing interest, and travels far from the arid discussions and foolish platitudes of the ordinary Government report. From time to time it seeks to find an explanation of educational facts in changing social and economic conditions. Thus, commenting on the decrease of boys in the post-intermediate classes, it points out that this is not due to lack of educational opportunities, but to the fact that the openings for boys to enter good and not blind alley employments, have recently greatly increased. Parents, who in former times found only in the learned professions an outlet for their children of promise, now have at their command innumerable avenues to success, and at a much less cost than the old professional course. As might be expected the keynote of the report is complacency and self-satisfaction. The Department looks upon the work it has created and finds all very good. It would be interesting to have the unbiassed opinion of an independent authority upon education in Scotland. Its great defect is the absolute uniformity which prevails from John o' Groats to Maidenkirke. It is safe to say that not a single educational experiment is being tried throughout the secondary schools of the country. All have their rigid and uniform courses, and within these limits excellent work is undoubtedly being done. But unless the strangle grip of the Department is removed, higher education will assuredly become more lifeless, more mechanical, and more unsatisfying year by year.

ACCORDING to the figures given, the number of presentations for the full leaving certificate has fallen from 2,290 in 1913, to 2,142 in 1914, the decrease being accounted for by the fact that this year candidates who had previously gained the certificate were not to be re-presented for examination. Of the candidates presented 1,609 were awarded the certificate, a percentage pass of 75 as compared with 76 last year. The number of candidates for Intermediate certificates was 6,468, as against 6,327 last year, a percentage of 79, as against 80 in 1913. The report states that the proportion of very young candidates was larger than in previous years, and suggests that presentations under fifteen years of age should be exceptional; on the other hand, it complains that in certain schools the average age of presentation was

well above sixteen. It is unfortunate that no statistics are supplied to show the number of presentations in the various subjects of the leaving and intermediate certificate examination. The Department states that the position of Greek is improving. The universities declare that the teaching of Greek has disappeared over large tracts of the country, and they have once again instituted university classes to teach the rudiments of the language. The publication of figures for the respective subjects would put the case both for Greek and German in its true light.

THE annual general meeting of the Secondary Education Association of Scotland was held in Glasgow University. Dr. Andrew Thomson, rector of Perth Academy, presided over the meeting. Sir Donald MacAlister, in welcoming the association to the University, said that the schools as well as the universities were called upon to face new and grave conditions. These conditions would profoundly modify many of their existing arrangements, and, perhaps also, many of their current views and projects. While looking forward to the speedy establishment of a Pax Britannica, it was theirs meanwhile to uphold amid strife and upheaval, the ideals of a right education upon which would depend the wisdom and worthiness of the Britons of the next generation. The retiring president, Dr. Thomson, in the course of his address, said that intellectualism had become rampant in German education, with what results they all knew. It would be well for Scottish teachers also to consider whether they did well in spending all their energies and those of their pupils in striving to obtain huge passes at the leaving certificate examinations, while devoting little, if any, time to training in the duties of citizenship and home life, and in all those higher qualities which go to make true men and women with a wider outlook and a passionate regard for the everlasting verities. Mr. J. W. Butters, rector of Ardrrossan Academy, was elected president for the ensuing year, and Mr. J. Strong, rector of the Royal High School, Edinburgh, was appointed vice-president.

DR. WM. BOYD, lecturer on education in Glasgow University, in the course of an address to the Educational Institute (Glasgow Branch), said that within recent years there had been a widespread discontent in all ranks of the teaching profession. While the general level of education and training had been steadily rising there had been no proportionate improvement in the conditions under which the teacher had to work. Not only were the salaries lower than in other professions, but there was an intolerable amount of external interference in purely professional concerns. The great struggle between the doctors and the State after the passing of the National Insurance Act, came to most teachers as a revelation of the possibilities of a strong profession with a proper concern for its own rights, and suggested the need for far-reaching changes in the organisation of teachers. It ought to be made clear that now that the Education Department had succeeded in creating a body of competent teachers, the time had come for a transfer of some of its functions to them. Teachers should have under their own control the supervision and inspection

of the schools, and even perhaps the examination for entrance to the professions. To raise the professional status in those and other ways it was necessary to bring together all the different teachers' associations into one big federal association which, while conserving the rights of the various sections, would enable joint action to be taken on all matters of common concern.

THE annual meeting of the Historical Association of Scotland was held this year in Edinburgh University. Prof. Lodge, who has acted as president since the inauguration of the association, intimated his resignation owing to the greatly increased work entailed upon him by his official position as secretary of the War Relief Fund in Scotland. In view of the splendid services Prof. Lodge is rendering in that connection, members refrained from urging him to reconsider his decision, but all bore the most enthusiastic tributes to the ability and the devotion with which he had guided the association through the difficulties of the early years. The association had now a membership of 525, with branches in all the chief centres. Its financial position was thoroughly sound, and the enthusiasm of its members found scope in many varied directions. All this was largely due to the exertions of Prof. Lodge, who had visited all the local centres and inspired them with his own energy and zeal. Prof. Medley, Glasgow University, was afterwards elected president, and Mr. W. C. A. Ross and Mr. D. MacGillivray were reappointed as hon. secretary and hon. treasurer respectively.

THE autumn meeting of the Classical Association was held in the Humanity Classroom, Edinburgh University. The secretary's report showed that the membership was 330, an increase of three over last year. The president, Dr. Heard, Fettes College, dealt, in his address, with the value of a classical education. He said that whatever might be the issue of the war, new ideas, new conceptions of national life, new aims, and new methods would assuredly come up for discussion. The question of the value of the classics, which had already been assailed, would certainly come in for consideration, and the Classical Association would probably find plenty of opportunity for defensive and offensive operations against its assailants. A classical education could not do everything, but it strengthened and developed certain qualities of mind that were indispensable to the community. Mr. William Rennie, lecturer in Greek, Glasgow University, read a paper emphasising the value and even the necessity of the study of Latin as a basis for the intelligent study of French. Prof. Baldwin Brown brought the proceedings to a close by a delightful paper on "What We Owe to the Romans in Art."

IRISH.

THE Intermediate Education Board has published the time-table of its examinations for 1915. They will begin on June 15th and finish on June 23rd. The order of the papers and the time allotted to each are the same as last June. There was one serious defect in the arrangement which, in spite of a unanimous appeal to the Board for alteration, remains unchanged.

Candidates in Latin and Greek are given only two hours for papers including composition, translation, prescribed and unprescribed, grammar and history. This led to the anomaly of setting alternative passages for unprescribed translation. It is hard to see why the Commissioners have refused to make the suggested improvement of extending the time to three hours. Several of them are classical scholars of distinction, who were never in their school or college days asked to perform the feat which they impose on Intermediate pupils. An examination in such circumstances cannot be regarded as a satisfactory test of scholarship, but only a scramble in which pupils cannot but fail to do themselves justice. What wonder if, as the Greek examiner says in his report on senior grade honour students, "in many cases the candidate did not seem to have composed a rough draft, but to have written down his version *currente calamo*," or "only in a few cases were the versions submitted free from gross blemishes, involving ignorance of elementary accidence and syntax." The candidates would have made a "fair copy" if they had had time, and it must not be too hastily inferred that senior grade honours candidates are ignorant of elementary grammar.

It is to be regretted that no official statement has been made about the payment this year of the £40,000 grant. The autumn session of Parliament came and went, and it was not even mentioned, and both the Castle and the Intermediate office are dumb. It has been stated privately on good authority that the money will be paid to the schools this year on the basis of the Intermediate grant without conditions, and that conditions will be drawn up during the next few months, but letters have appeared in the public Press from persons who ought to be well informed leading to the conclusion that the money may be again lost for this year. These doubts and contradictory assertions could easily be settled by an official announcement.

THE Department of Agriculture and Technical Instruction announces three special examinations for teachers' qualifications, to be held in 1915. On April 24th an examination will take place for teachers' qualifications in experimental science and domestic economy for teachers actually engaged in teaching in day secondary schools under the Department. The examination will be partly written and partly practical. The second examination is for teachers' qualifications in manual training (woodwork), and will be held in Dublin on June 15th and 16th. Candidates must be above twenty-one years of age. The third examination is in the principles, methods, and history of education, with special reference to science teaching, to be held on June 26th. The Department also issues a statement as to the regulations under which it is prepared to recognise special courses of instruction in experimental science and domestic economy for teachers in day secondary schools. For details of these, application should be made to the Department.

A SPECIAL meeting of the Senate of the University of Dublin (Trinity College) was held at the end of

November for the purpose of conferring degrees on students of medicine who desire to enter the Army at the present crisis. The Vice Chancellor (Mr. Justice Madden) stated that in July last the strength of the Officers' Training Corps in Trinity College was about 340 of all ranks, under the command of one of the fellows, Major Tate, who was also the public orator of the University. Five hundred and one Trinity men have applied for commissions through the corps (including practically all the 340), and the strength of the corps now is 360, a number which represents new recruits. From the medical school sixty of the younger graduates in medicine have gone on active service, besides others who have joined the Royal Army Medical Corps, but will not be called out for active service until they have passed their final examinations.

ONE curious result of the war is the removal from the French honour course in Trinity of some half-dozen editions of French books which are published in Germany, and cannot at present be obtained, and for which other French books published in France and England are substituted.

THE meeting of Convocation of the National University last term passed a resolution urging the authorities of University College to establish evening courses similar to those formerly carried on in the old University College in connection with the Royal University. The object is to enable students to get a degree in the National University by examination only, and it was stated that London University had already applied to the Corporation of Dublin for facilities to hold its examinations in Ireland, but the corporation had temporarily refused in order to give the National University the opportunity of doing this work. It was also unanimously resolved that in the opinion of Convocation, facilities should be afforded by the University to the students of Louvain and other Belgian universities whose studies have been interrupted by the war, and that, if possible, temporary posts on the professorial staff of the University should be offered to some of the Louvain professors.

WELSH.

THE organisation of mining education in South Wales is making marked progress. Reference has already been made in these notes to the School of Mining at Treforest, established by the colliery proprietors, and to be managed by a board representative of the owners, the workmen, and the education authorities. Application has been made to the Board of Education to recognise the institution as a technical school for the purposes of grant-earning, and the Board is now in consultation with the Glamorgan Education Committee on the subject.

THOSE who have had experience of the work of organising evening technical classes are well aware that one of the two chief difficulties encountered is the lack of preparation shown by the students. A young man will come to be enrolled; he wants to increase his efficiency and improve his position, and puts his name down for a mining or an engineering class. But he has no knowledge of elementary mathematics, chemistry, physics, geology, or drawing, and

most probably his power of expressing himself in English leaves much to be desired. This is not to be wondered at, as there has probably been an educationally empty interval between his school career and the work he now wishes to take up; it is an ungrateful task to dishearten him by putting the case fully before him, so he is admitted to the class, and much of the time of the teacher is taken up in giving him, imperfectly, on the road, some of the equipment with which he ought to have started.

To meet this difficulty the Monmouthshire Education Committee is establishing six preparatory schools in the coal-mining district, so that men can have a year's training in the necessary preparatory subjects before proceeding to the Mining School at Crumlin. By this means they will be able to obtain the instruction in evening classes within easy reach of their homes and their work.

THE Board of Education's Circular on Examinations in Secondary Schools has scarcely received the attention it deserves, possibly because of the stress of the times; but it appears to be pretty generally felt that the sudden assumption by the Board of power to prohibit schools from entering for certain or for all examinations other than those prescribed is somewhat arbitrary, and there seems to be an absence of the transition period to which we are accustomed in the bringing-on of important changes.

THIS is especially felt in Wales, where secondary education, so far as examination and inspection are concerned, is placed by statute under the control of the Central Board. Denbighshire County Council recently called a conference at Chester, on which the governing bodies of all the schools, and the head-teachers were represented. We do not note that the assistant-teachers were consulted. The conference requested the Central Board to consider the situation.

THE Welsh County Schools Association, which is composed of headmasters and headmistresses, has issued a circular letter advocating the retention of the junior certificate, and assigning as one of the reasons that "in the sub-junior forms, where a public examination is not to be faced, the head-teacher has to exercise the keenest supervision to secure efficient teaching." The assistant-teachers do not intend to let this go without a formal protest; they suggest that they are as honourable a body as the heads; that if they cannot be trusted to teach, they are not fit to examine their classes, as suggested in the circular; and that if the statement is true it is a reflection on the head's power of choosing proper assistants.

No doubt instances of hiring service might be found—in any grade—but there is plenty of professional spirit in the schools, which deserves better recognition than it now gets in two directions—the levelling up of salaries, which are much below those in England, and the admission of assistants to direct representation on the bodies the deliberations of which affect their work. They have at least as great an interest in the Central Welsh Board and the Welsh University Court as have, say the certificated teachers

in elementary schools, and the latter are directly represented.

THE Central Welsh Board met at Shrewsbury on November 20th, and appointed Mr. Owen Owen, who has been chief inspector since its formation, to be clerk to the board and superintendent of examinations, and Mr. Myrddin Evans to be chief clerk in the office. A new chief inspector is to be appointed.

THE King Edward VII. Welsh National Memorial Association has now more than 3,000 tuberculosis patients under treatment in hospitals or sanatoria, and 14,000 under examination and treatment elsewhere. Mr. J. C. Hanbury, J.P., D.L., of Pontypool Park, has offered the association seven acres of land near Pontypool Road Station for the erection of a tuberculosis hospital for Newport and Monmouthshire. The hospital is to provide 150 beds, and the cost is estimated at £25,000.

THE National Union of Welsh Societies has arranged to hold its next annual conference at Swansea, probably in May next; an attempt is to be made to bring together all the Celtic peoples, and to establish a triennial Pan-Celtic conference.

RECENT SCHOOL BOOKS AND APPARATUS.

Classics.

Republican Rome: Her Conquests, Manners, and Institutions from the Earliest Times to the Death of Caesar. By H. L. Havell. xxiii+563 pp. (Harrap.) 7s. 6d. net.—Both the narrative and the production of this book are excellent. With its photogravure frontispiece, sixty-four full-page plates, numerous other illustrations, maps, and plans, it will make an ideal gift for any boy interested in Roman things. The volume is one of Messrs. Harrap's "Great Nations" series, and is a worthy successor to its forerunner, "Ancient Greece," by Mr. Cotterill. Not that it is a Christmas production; on the contrary it is a scholarly work, and yet quite readable for boys in middle or upper forms. In it Mr. Havell has succeeded in reviving the real life of a past age with its civilisation, art, and literature. The division of the chapters into short paragraphs with subject headings serves both to sustain interest and to elucidate the narrative. Throughout the first part of the book there are numerous good and scholarly footnotes in which references are given to the original authorities. We could wish that these had not become so scanty as the narrative proceeds. At the end is a good appendix (with plates) on Roman coinage, and there is a list of dates and a full index. Altogether it is an excellent piece of work.

A Latin Prose Grammar. By E. L. Churchill and E. V. Slater. x+331 pp. (Bell.) 3s. 6d.—This book is in four parts—Part i., Accidence; Part ii., the Simple Sentence, to which is appended a list of words requiring special cases. This may be useful for reference, but we hope that there are few classical masters left who will take the advice of the preface and use them for committing to memory. Part iii. deals with general syntax of the compound sentence, and "the authors have taken the opportunity of giving an alphabetical list of Latin relatives and subordinate conjunctions with their various meanings and constructions"—which exemplifies the worst possible method of teaching merely by rote. For example, under *antequam* we find "(b) Of something expected to

happen. Use the subjunctive." This is followed by an example without any attempt to make the boy realise the reason for this dogmatic statement in an intelligent way. In part iv. are the usual tables, together with (1) list of verbs and their constructions—another encouragement of parrot work; (2) English words and Latin idioms—the most intelligent part of the book. On the first page of the book in a special note on quantity we read that "vowels standing before two consonants in the same word are long by position." To talk like this is to advertise that one's book is likely to be of no use to those who have started to bring intelligence into their teaching.

Ovid: Elegiac Poems. Edited by J. W. E. Pearce. Vol. i., *The Earlier Poems.* xxvii+210 pp. Vol. ii., *The Roman Calendar.* xxxiv+206 pp. Vol. iii., *Letters from Exile.* xxviii+181 pp. (Clarendon Press.) 2s. each.—In these three volumes Mr. Pearce endeavours "to create in the beginner a taste for Latin poetry, by leading him to appreciate points of style and poetical expression, and by encouraging him to a comparison of passages from our own literature." That this aim could better be accomplished through Virgil rather than by Ovid, few would gainsay; but it is a laudable endeavour, and Mr. Pearce has carried it out well. Each volume has a tripartite introduction on the "Life of Ovid," "Ovid as Poet," and on the poems peculiar to the respective volumes. The first contains most of the "Heroides," together with selections from the "Amores" (including the Elegy on Tibullus and Corinna's Sparrow), the "Ars Amatoria" and the "Remedia Amoris." The second volume contains about half of the "Fasti"; and the third some 2,500 lines from the "Tristia" and "Epistulæ ex Ponto." There are numerous quotations from English poetry heading the different selections and also throughout the notes, which are clear and written in an intimate style free from all trace of pedantry. The three volumes should make an excellent school Ovid.

De Ducibus. (Selections from Cornelius Nepos.) By W. G. Butler. viii+124 pp. (Bell.) 1s. 6d.—Mr. Butler has here simplified and compressed Nepos's narrative of the exploits of Miltiades, Cimon, Epaminondas, Pelopidas, Agesilaus, and Hannibal. The book should be useful, though we cannot say that the somewhat pedestrian style of the original has been at all enlivened. There are many appropriate illustrations and brief accounts, in English, of each life affixed to the respective sections. Grammatical exercises and questions are interspersed throughout. Perhaps it would have been better to have given only an example or two of these, and to have left more to the teacher's initiative. As it is, they add to the prosy effect of the narrative. Long quantities have been marked either very carelessly or upon no system at all, and no attempt has been made to mark *hidden* quantities. There are brief notes and a vocabulary.

English.

Matriculation English Course. By J. C. Nesfield. 416 pp. (Macmillan.) 3s. 6d.—Mr. Nesfield's new book is designed to cover the ground required for the usual senior school examinations. It is intended to provide a three years' course of study, and is divided into three parts: essay-writing, exercises subsidiary to composition, and figures of speech, prosody, and style. These three parts do not, of course, coincide with a year's work, but the three together give an excellent three year's course. Mr. Nesfield directs special attention to chapter ii., in the first part, and we are very glad to emphasise it, too, for it shows

the practical spirit of the whole work. That chapter contains "thirty-five extracts from as many different authors, which the student can be asked to reproduce in the form of essays"; and we have no doubt whatever that Mr. Nesfield is right in thinking that "such exercises spread over one year will go far to extending [the pupil's] vocabulary, increasing his general knowledge, and giving him greater facility in expressing the ideas which have been stored in his mind by studying the originals." But while emphasising this point, we are of opinion that many other points in the book are equally sound, and we recommend it with every confidence to teachers of English. We should add that Mr. Nesfield has also published a key (at the same price), in which every question asked in the present book has been fully answered.

A Handbook of English and Commercial Correspondence. By H. H. Lawson. 102 pp. (Blackie.) 1s. 6d.—We thought at first that Mr. Lawson wished to point out by his title the painful fact that most commercial correspondence is not English. However, that is not so, and we are glad to say that if in the future commercial correspondence is not English, the fault will not lie with Mr. Lawson, for he gives in this little book a training in both subjects excellently adapted to the needs of "students of commerce." He believes that "the subject should be approached only through the scientific treatment of the principles of English grammar," and he has certainly succeeded in providing a progressive and educational course which should be of splendid service in technical and commercial schools.

A Guide to the Study of English. By F. J. Rowe and W. T. Webb. 432 pp. (Macmillan.) 3s. 6d.—This book adapts for English use the authors' earlier "Hints on the Study of English," which has had a great circulation throughout India for the last forty years. Teachers will no doubt find it very useful for reference, but it is a pity that more care was not taken to bring it into line with the newer terminology. It is not quite clear either what is meant (p. 120) by saying that the verbal noun is sometimes found with the functions of a participle in such a sentence as: "They ceased firing upon the ship." On the whole we are inclined to think that formal grammar bulks too largely if the book is intended as a school training in the use of English, and that too much elementary matter is included if it is intended as an advanced manual on English grammar.

History.

Greek History for Schools. By C. D. Edmonds. xvii+330 pp. (Cambridge University Press.) 5s. net.—This is an ideal school-book; we can imagine nothing more delightful to a boy who is just beginning to be interested in Greek things. Apart from the "get-up" of the book, which is excellent—there are some forty full-page illustrations taken from photographs, besides innumerable maps and text illustrations—the narrative has been well carried out. The importance of geographical features is stressed in a preliminary survey of the Mediterranean basin, in which trade routes are especially mentioned; the results of the excavations of Sir Arthur Evans at Knossos and elsewhere are included in the account of Ægean civilisation; and there are very readable chapters on Athenian life (with accounts of the chief buildings) and on the culture of the Hellenistic age. Chapters such as these, together with the quoting of the epitaph of Simonides on those who fell at Thermopylæ, and the splendid series of photographic illustrations of places and monuments, help a boy to realise from the beginning something of that admiration and love of Greek things which we of the older

generation attained rather in spite of, than by the help of, our school books. Two good details are rough contour lines in the maps and the suggestions for questions at the end of each chapter, which should serve to indicate, as Mr. Edmonds says in his preface, "that to read a chapter and to study it are two very different things."

Germany and Europe. By J. W. Allen. vi + 133 pp. (Bell.) 2s. 6d. net.—We have now blue-books, white-books, yellow-books, setting forth the diplomatic correspondence which preceded the outbreak of the war, but we all feel that they do not tell us the real causes of the outbreak. In this little book Mr. Allen undertakes to explain some of the reasons. He is very modest, and confesses that there are many things we cannot yet know, but the busy reader will learn much from its pages. After a brief "foreword," the book is divided into four parts. In "The Theory of International Militarism," the German theory of the State as an end in itself is expounded, and the views of Treitschke and others that it embodies a "will to power," which is independent of all treaty obligations, a theory which Mr. Allen controverts with the reflections that the State does not exist apart from the individuals composing it (an argument which reminds us of Mr. Norman Angell's theories), and that destruction, the essential of war, is not progress as Germans think. In the chapter entitled "Germany," Mr. Allen describes the Germans as obsessed with untrue views of a militant Russia, a France desirous of revenge, and an England the Empire of which blocks their way to world domination and is at the same time unsound. The third chapter summarises the diplomatic prelude and discusses, with general approval, England's action at the crisis, and the fourth sets forth England's case on behalf of Europe as against Germany, and makes a forecast of what would be the wisest terms of peace which we should impose. It is impossible for us to do more than indicate the main contents of the book; there is much besides what we have described, and heartily do we recommend our readers to read the book for themselves.

Economic History of England. By M. Briggs. viii + 508 pp. (Clive.) 5s. 6d.—Now that the study of the economic history of England is becoming more and more widespread in schools there should be a growing demand for text-books on the subject. The available supply is certainly not large, as anyone who has had to teach economic history will know. Mr. Briggs's book is therefore opportune, and as an introductory text-book for older pupils it should be found very useful. The writer gives evidence of wide reading, and he shows that he can skilfully use what he has digested. His illustrations have a freshness and actuality about them which deserve all praise. The arrangement of the matter, too, is good. It is that common to all the books in this series, of breaking up every chapter into numbered paragraphs, each duly labelled.

Mr. Briggs's method is not strictly chronological but rather that of grouping. Here are a few of his chapter headings:—"The Guilds," "The Black Death and its Consequences," "The Condition of the Working Classes," "Currency and Banking." This method has much to be said for it; by its aid the pupil is likely to appreciate the true inwardness of economic changes. There are two useful chapters on Scotland and Ireland respectively; and London also receives consideration by itself. The introductory chapter is among the best we have read in elementary text-books of this sort. On the whole there are few serious omissions of salient points. We suggest, however, that the trading

companies might have been more fully dealt with, and in the story of the Poor Law the author might with advantage have shown how voluntary contributions for relief of the poor were gradually replaced by enforced levies. Moreover, the history of the Middle Ages might have been somewhat expanded. The scorn which the author somewhat airily pours on the medieval period is not a sufficient reason for giving it (roughly) about one-fourth of his space. The rest is devoted to the economic history of the last hundred and fifty years. This, of course, is perfectly legitimate. But then the title-page should have made this quite clear.

While the printing and general get-up of the book is eminently satisfactory, the index is a very poor performance, and the bibliography gives the impression of being much like a jumble. W. Bagshot as the author of "Lombard Street," and C. Cross of "The Gild Merchant," ought surely not to have been allowed to stand. These are small slips, to be sure; but they are annoying in view of the fact that the book as a whole shows great carefulness in compilation.

Geography.

A War Map of Western and Central Europe. (Clarendon Press.) 15s.; in parts, 10s. and 6s. ed.—The Clarendon Press has issued a map of Central Europe which covers the war admirably. It consists of two sheets, eyeletted and folded, so that the western theatre is shown on one sheet and the eastern theatre on the other. The scale is 16 miles to 1 in., and the boundaries are approximately 5° W., 25° E., 42° N., and 55° N.; the uplands and mountains are indicated by brown shading; the rivers, coastline, political boundaries are strongly marked in black; the chief towns and fortresses are clearly indicated and named. Since the linen is unglazed, it will be possible for the teacher to add desirable information to suit his own lessons. The map has one weakness, which is rather unfortunate in view of the excellence of the other features: the railways are too faint, and the railway system shown is incomplete even from the strategic point of view. The teacher will, however, be easily able to remedy this defect. We know no other map which is so suitable to be hung in a prominent place in schools at the present crisis, and teachers will do well to obtain a copy of this map. For other purposes, the map is supplied (a) unmounted in separate sections, (b) mounted on rollers.

Contour War Map of Europe. 63 miles = 1 in. (Philip.) 1s. net; cloth, varnished, with roller or dissected, 2s. 6d. net.—An extremely useful contoured map showing Europe, except the extreme north and north-east. A map which can be usefully displayed in a prominent place in the school.

Paris to Berlin. (Orographically coloured.) 19 miles = 1 in. (Johnston.) 1s. 6d. net; cloth, folded, 3s. net; cloth, rollers, varnished, 4s. 6d. net.—A good map of the country between Paris and Berlin, between lat. 48° and 54° N.—the western war theatre. Inset are two maps showing the two capital cities and their environs.

"Daily Mail" World Map of War and Commerce. (War on German Trade.) (Philip.) 1s. net; cloth, 2s. 6d. net.; cloth, rollers, varnished, 3s. 6d. net.—A mercator world map showing the various empires, British and foreign naval and coaling stations, wireless stations, and cables. At the foot are some diagrams regarding the navies, populations, and resources of the various countries.

Trade and the War: Trade Maps, Charts, and Statistics. Issued by the Statistical and Information

Department of the London Chamber of Commerce, together with a Supplement of War Maps by G. R. Gill. (Gill.) 1s. net.—An interesting set of statistical diagrams and maps of Europe, the home waters of the German fleet, etc. The world's wheat supply is specially treated.

Surveying for Schools and Scouts. By W. A. Richardson. 101 pp. (Philip.) 1s. 6d. net.—The title to this book is indicative of its contents and equally indicative of the practical nature of its teaching. For example, we are shown by photograph how to roll up a surveyor's chain, and we are introduced by means of many practical exercises and diagrams to the chief features of surveying as it can be taught in schools. This book fills a distinct gap in the serried rows of school text-books.

The New Outlook Geography: The Home of Man. Part iii., *America*. By W. C. Brown and P. H. Johnson. 282 pp. 1s. 9d. Part iv., *Asia*. By L. A. Coles. 192 pp. 1s. 3d. Maps and illustrations. (Harrap.)—These books consist of a mosaic of maps, paragraphs of descriptive matter, and sets of questions; and the combination does not appear to be very happy. Many of the maps should be condemned, because they necessitate the use of a microscope to decipher the conventional signs which they show; others are extremely clear and suitable for school use. Each book includes appendices of quantitative information, some of which requires revision; for example, the trade of the United Kingdom is quoted as smaller than that of Germany, the sugar production of India is given as but one-sixth that of Germany, the number of swine in the United States as fewer than those in France. In some cases the two books give different values.

Rambles Among our Industries. The Airman and his Craft. By W. J. Claxton. 80 pp. (Blackie.) 9d.—Mr. Claxton has added another useful and welcome book to his series of descriptions of our industries written for the benefit of our boys and girls. He judges to a nicety the precise amount of technical information which is required for his purpose, and his book appeals to the child not only because it satisfies his curiosity, but because it tells the story of human enterprise, in this case, the conquest of the air.

The Map and its Story: a Physical and Commercial Atlas. 44 maps with descriptive letterpress. (Bacon.) 1s.—The maps in this atlas vary in excellence. The worst are those which deal with temperature and attempt to show annual, January, and July temperatures; it is much too laborious a task even in the case of Africa, which is by comparison an easy map, to disentangle the January lines from the others. The best are the maps which attempt least, notably the rainfall maps. The colours are in some cases crude, and the printing is not always successful. The teacher will probably protest against the letterpress, which contains just the facts which the good teacher should expect his pupils to discover for themselves from the map.

Handwork Models to Accompany Visual Geography. By Agnes Nightingale. (Black.) Three subjects, 6d.—We welcomed Miss Nightingale's "Visual Geography," and now for kindergarten pupils we welcome this set of handwork models. Each model contains a set of pictures to be coloured, and provides full instructions. For example, there is an Indian village among the trees; this is coloured, cut out, and set up as a background. Indians, tepees, a canoe, a tree, may be coloured, cut out, and set up appropriately in front of the background. The whole makes a good geographical game.

Earth Knowledge. (1) Europe, regionally treated. 90 pp. (2) The Empire overseas, regionally treated. 80 pp. (McDougall.) 6d. each.—These little geographies contain text, pictures, and maps, some of which are coloured. The pictures are well chosen; the text seems overloaded with names; and the method of showing elevation by various shades of black does not appear sufficiently definite and clear. The information is sound, but rather condensed; so that these books might well be used to supplement by home reading thoroughly good oral lessons.

Here and There Stories. Intermediate No. 8. *Here and There in the British Empire.* 80 pp. 4d. Senior No. 14. *Here and There in Asia.* 111 pp. 5d. (Macmillan.)—These excellent little books consist of extracts from well-known descriptive books which are supplemented by carefully chosen illustrations, and are arranged to present a suitable account of the area under consideration.

Mathematics.

The Teaching of Algebra (including Trigonometry). By T. P. Nunn. xiv + 616 pp. (Longmans). 7s. 6d.—Prof. Nunn provides a rich and varied feast of good things in the volume before us, and even the oldest and most experienced teacher will find that many topics with which he has long been familiar are dealt with in a thoroughly fresh and stimulating manner. This work, together with the two subsidiary volumes of exercises, furnishes a course of analysis which may be adapted to the needs of almost all pupils, whether specialists or non-specialists, in secondary schools. The author's view of the reference of the term "algebra" is rather wide, as it includes trigonometry, plane and spherical, together with an exposition of the fundamentals of the calculus. The course is divided into two parts, of which the first, under the headings of "Non-Directed Numbers, Directed Numbers, and Logarithms," may be regarded as that for non-specialists, while the second part provides alternative schemes of study for the benefit of those who require for professional or other reasons a more extensive acquaintance with mathematics. The most novel sections in this part are those on number-systems, map projections, and statistics. Hitherto we have been chiefly indebted to American writers for discussions of the theory and method of teaching mathematics, and these, though valuable, were naturally to some extent out of touch with the peculiarly English points of view. For this reason alone if for no other, Prof. Nunn's work deserves a hearty welcome.

Modern Instruments and Methods of Calculation: A Handbook of the Napier Tercentenary Exhibition. Edited by E. M. Horsburgh. vii + 343 pp. (Bell.) 6s.—The Tercentenary Committee is to be congratulated on the appearance of this handsome volume, which forms a permanent and valuable record of the exhibition organised in connection with the Napier celebration. The price, moreover, is exceedingly moderate. The first sections are devoted to Napier, and include a very readable account of his life and works by Prof. G. A. Gibson. Section C contains a descriptive list of mathematical tables, and those who are interested will find that it usefully supplements the articles on logarithms and mathematical tables by Dr. Glaisher in the "Encyclopædia Britannica." There is also an interesting chapter on persons who have shown special development of calculating ability. The following sections, dealing with calculating machines and instruments, are probably the most valuable feature of the book, for they bring together a mass of information much of which is new and certainly has hitherto not

been easily accessible. Different writers contribute accounts of the instruments with which they are familiar, and in the majority of cases the mechanism is illustrated and the theory of the operations fully explained. The ancient abacus and slide rule and modern arithmometers and harmonic analysers, together with many other instruments, are alike passed under review. The final sections deal with ruled papers and mathematical models. All these are fitly included in a Napier exhibition, for Napier took the first great step in reducing the labour of mathematical computation.

Projective Geometry. By G. B. Mathews. xiv+349 pp. (Longmans.) 5s.—This treatise is one of the most scholarly works on projective geometry which has appeared from the pen of an English mathematician. Being intended for the use of beginners, Mr. Mathews has eschewed that extremity of rigour in the laying of the foundations of the subject, which can be appreciated only by the advanced student. The number of undefined terms is considerable, and the relations assumed to exist between them are not mutually independent.

In developing the theory he has largely followed v. Standt, but has always endeavoured to simplify, as far as possible, the manner of presentation of the facts. The only claim for originality is made in connection with the theory of projective metrics contained in a chapter which is said to have been written with some hesitation, lest it should be regarded as a set of "tips" enabling the student to prove projective theorems by a sort of sleight-of-hand. We do not think any apology is needed for it. Mr. Mathews has done his work in an excellent manner, and the book forms a most valuable addition to the mathematician's library.

Mathematical Problem Papers. By C. Davison. vi+175+xix pp. (Bell.) 2s. 6d.—This collection consists of two hundred papers, each containing eight questions, together with an appendix of fifty standard geometrical exercises. The questions are confined to arithmetic, plane and solid geometry, elementary algebra, and trigonometry, and the papers are consequently not in any sense scholarship papers. At the same time they will be found to afford excellent practice to the mathematical specialists in the middle and upper forms. Teachers will be glad to find that answers are given where necessary.

Science and Technology.

Methods of Quantitative Organic Analysis. By P. C. Kingscott and R. S. Knight. 283 pp. (Longmans.) 6s. 6d. net.—This excellent little book is divided into four sections, devoted to the determination of molecular weights by physical methods, ultimate analysis, the estimation of typical groups, and the estimation of some compounds of technical importance. It affords, incidentally, another illustration of the eminently sound principle of allowing students of chemistry to handle commercial products and to get in touch with the outside world of manufacture. Not only do the authors give careful and accurate instructions for the various determinations, but also they provide the reader with ample references to the literature, so that original papers may be consulted. The detail is extraordinarily thorough, and the book should prove invaluable, not only to the pure research man, but also to the works chemist. The authors point out that the arrangement of their work is based on the lectures of Dr. M. A. Whiteley at the Imperial College. The book is well printed and admirably illustrated.

Elementary Household Chemistry. By J. F. Snell. 307 pp. (New York: The Macmillan Co.) 5s. 6d. net.—This excellent handbook bears witness to the increasing attention paid to the study of home economics, at any rate, in America. The first ten chapters contain a brief summary of the principles of chemistry for students who have little or no previous knowledge of the science. Considerable improvement could be effected by eliminating these introductory chapters and insisting on the necessary fundamental knowledge of chemistry being known before the applied science is considered. Although the range of subjects dealt with in the book is remarkably wide, yet the treatment is throughout accurate and illuminative. Prof. Snell discusses fuels, lighting and heating, tarnishing of metals, hardness of water, fats, saponification and soap, detergents, emulsions, foods and the digestive process, textile fibres, bleaching, and dyeing. Sandwiched between many of these chapters are explanatory sections of pure chemistry, as, for example, ionisation, hydrolysis, the carbohydrates, the proteins, and organic radicals. The author has thus aimed at combining a large amount of useful fact and information respecting domestic economy with a sound grasp of the underlying principles. This aim has been accomplished successfully, and the result is bound to be a welcome addition to this, the newest branch of applied chemistry. The half-tone blocks are a special feature in the illustrations, and portray many eminent chemists, from Mayow to Emil Fischer.

Food Products. By H. C. Sherman. 594 pp. (New York: The Macmillan Company.) 10s. net.—The large number of books recently published in America dealing with the economic side of chemistry shows the amount of attention which is paid there to this branch of the science. The present volume belongs to the same series as Snell's "Elementary Household Chemistry," reviewed above, and what we there say about the pleasing get-up and the excellent illustrations obtains equally for Prof. Sherman's work. The author claims that he has incorporated in the subject-matter of a general study of foods the results of recent advances both in food legislation and the scientific investigations of certain aspects of the composition and value of foodstuffs. Each important type of food has devoted to it a chapter which covers (1) production and preparation for market; (2) composition and relative food value; (3) sanitation, inspection, and standard of purity; (4) special characteristics of composition, digestibility, nutritive value, and place in the diet. The thoroughness with which this comprehensive survey has been carried out renders the book of considerable value. Ample references are given to the standard literature and to recent research on the various products discussed. The book may be confidently recommended to those who are interested in general domestic economy, as well as to students of the chemistry of nutrition.

Pedagogy.

Child Training: Suggestions for Parents and Teachers. By Mrs. Arthur H. D. Acland. x+179 pp. (Sidgwick and Jackson.) 2s. 6d. net.—All parents engaged in the task of trying to train young children, or of trying not to interfere with their proper development, should study this book. Mrs. Acland writes as one having authority, for what she has to say is the result of careful observation and sympathetic understanding throughout a long experience. Unlike so many books on child-study, this is delightfully readable, and abounds in flashes of humour. Mrs. Acland assures the reader that "none of the illustrative stories in this book are invented,"

and we cannot help thinking some of her child acquaintances have been a little unusual. For example, the "baby girl, under nine months old, who hummed the tune of 'O come, all ye faithful,' as she sucked at her bottle, having caught it from her nurse"; or, "a cheery set of brothers and sisters," who "occupied a short space of waiting for tea by spreading half-a-pound of butter over the window-panes." Of course, the reader will disagree with some of Mrs. Acland's proposals; some of those on punishments will not meet with universal approval, nor those on children's books. But these sane, helpful chapters as a whole will prove of practical assistance in all sorts of everyday contingencies of nursery life, and we hope the book will have the wide circulation it deserves.

Miscellaneous.

The Student's Handbook to the University and Colleges of Cambridge. Thirteenth edition. Revised to June 30th, 1914. 702 pp. (Cambridge University Press.) 3s. net.

The Cambridge University Calendar, 1914-15. 1034 pp. (Cambridge University Press.) 7s. 6d. net.

It need only be said of these useful manuals that they are as indispensable as ever to all who need accurate and detailed information about the different colleges and different branches of study. The chief additions to the Handbook consist of new or amended regulations concerning degree fees, military subjects as a "special," the diploma in anthropology, and, in particular, rules for the admission of men not members of the University to lectures and laboratories. The mass of other information which the book always contains has been thoroughly revised and brought up to date. The Calendar, though reduced in price, is as efficient a piece of work as ever.

Scout Publications. (Glasgow: Brown.) *Boy Scout Diary.* 6d. net.—Contains a great deal of useful information, but is not bound stiffly enough. The energetic scout would have the cover off in a week. The arrangement of the days, eight instead of seven, at an opening, is also not satisfactory.

Semaphore Signalling Cards. 3d.—A packet of cards with the semaphore letter on one side and its alphabetical equivalent on the other. Can be used by a lone scout to test his ability to read, and an ingenious scoutmaster might even invent one or two good games with it.

Boy Scouts' Signal Instructor. 6d. net.—A big handkerchief on which are printed the semaphore and morse codes and various instructions in signalling. The "instructor" is large enough to be used as a small bandage. The printing is in fast colours, so that the handkerchief is washable.

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(Compiled from Information provided by the Publishers.)

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and Prose." Selected and annotated by H. F. Stewart and A. Tilley. x+244 pp. (Cambridge University Press.) 4s. net.

Ferdinand Schmidt: "Reineke Fuchs." Edited by A. L. Gaskin. (Siepmann's German Series.) 208 pp. (Macmillan.) 2s.

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Edmond About: "Le Roi Des Montagnes." Forming a new volume of Massard's Series of French Readers, according to the New or Direct Method. 288 pp. (Rivington.) 2s.

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"The Asiatic Dionysos." By Gladys M. N. Davis. 276 pp. (Bell.) 10s. 6d. net.

"Zeus: A Study in Ancient Religion." Vol. I. By A. B. Cook. xlv+880 pp. (Cambridge University Press.) 25s. net.

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"The Travels of Sir John Mandeville." Edited by S. E. Winbolt. (Bell's Sixpenny English Texts.) 120 pp. (Bell.) 6d.

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"The Pronunciation of English." By Daniel Jones. xx+154 pp. (Cambridge University Press.) 2s. 6d. net.

"A Guide to the Study of English." By F. J. Rowe and W. T. Webb. 442 pp. (Macmillan.) 3s. 6d.

"Matriculation English Course." By J. C. Nesfield. 424 pp. (Macmillan.) 3s. 6d.

"Key to the Above." By J. C. Nesfield. 408 pp. (Macmillan.) 3s. 6d. net.

Matthew Arnold: "Sohrab and Rustum." Edited by F. R. Tomlinson. 48 pp. (Macmillan.) 6d.

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Les Universités Françaises aux Universités des Pays Neutres.

LES Universités Allemandes viennent de protester contre les accusations dont leur pays est l'objet à l'occasion de la guerre.

Les Universités Françaises se borneront à vous soumettre les questions suivantes :

Qui a voulu cette guerre ?

Qui, pendant le trop court répit laissé aux délibérations de l'Europe, s'est ingénié à trouver des formules de conciliation ? Qui, au contraire, a refusé toutes celles qu'ont successivement proposées l'Angleterre, la Russie, la France et l'Italie ?

Qui, au moment précis où le conflit paraissait s'apaiser, a déchaîné la guerre, comme si l'occasion propice était attendue et guettée ?

Qui a violé la neutralité de la Belgique, après l'avoir garantie ?

Qui a déclaré à ce propos que neutralité est un mot, que "les traités sont des chiffons de papier," et qu'en temps de guerre "on fait comme on peut" ?

Qui tient pour non avenues les conventions internationales par lesquelles les puissances signataires se sont engagées à n'user, dans la conduite de la guerre, d'aucun moyen de force constituant une "barbarie" ou une "pérfidie" et à respecter les monuments historiques, les édifices des cultes, des sciences, des arts et de la bienfaisance sauf dans les cas où l'ennemi, les dénaturant le premier, les emploierait à des fins militaires ?

Dans quelles conditions l'Université de Louvain a-t-elle été détruite ?

Dans quelles conditions la Cathédrale de Reims a-t-elle été brûlée ?

Dans quelles conditions des bombes incendiaires ont-elles été jetées sur Notre-Dame de Paris ?

A ces questions, les faits seuls doivent répondre.

Déjà, vous pouvez consulter les documents publiés par les chancelleries, les résultats d'enquêtes faites par des neutres, les témoignages trouvés dans des carnets allemands, les témoignages des ruines de Belgique et des ruines de France.

Ce sont nos preuves.

Contre elles, il ne suffit pas, ainsi que l'ont fait les représentants de la science et de l'art allemands, d'énoncer des dénégations, appuyées seulement d'une "parole d'honneur" impérative.

Il ne suffit pas davantage, comme font les Universités Allemandes, de dire : Vous connaissez notre enseignement ; il n'a pu former une nation de barbares.

Nous savons quelle a été la valeur de cet enseignement. Mais, nous savons aussi que, rompant avec les traditions de l'Allemagne de Leibnitz, de Kant et de Goethe, la pensée allemande vient de se déclarer solidaire, tributaire et sujette du militarisme prussien, et qu'emportée par lui, elle prétend à la domination universelle.

De cette prétention, les preuves abondent. Hier encore, un maître de l'Université de Leipzig écrivait : "C'est sur nos épaules que repose le sort futur de la culture en Europe."

Les Universités Françaises, elles, continuent de penser que la civilisation est l'œuvre non pas d'un

peuple unique, mais de tous les peuples, que la richesse intellectuelle et morale de l'humanité est créée par la naturelle variété et l'indépendance nécessaire de tous les génies nationaux.

Comme les armées alliées, elles défendent, pour leur part, la liberté du monde.

Le 3 Novembre, 1914.

L'UNIVERSITÉ DE PARIS.
L'UNIVERSITÉ D'AIN-MARSEILLE.
L'UNIVERSITÉ D'ALGER.
L'UNIVERSITÉ DE BESANÇON.
L'UNIVERSITÉ DE BORDEAUX.
L'UNIVERSITÉ DE CAEN.
L'UNIVERSITÉ DE CLERMONT.
L'UNIVERSITÉ DE DIJON.
L'UNIVERSITÉ DE GRENOBLE.
L'UNIVERSITÉ DE LYON.
L'UNIVERSITÉ DE MONTPELLIER.
L'UNIVERSITÉ DE NANCY.
L'UNIVERSITÉ DE POITIERS.
L'UNIVERSITÉ DE RENNES.
L'UNIVERSITÉ DE TOULOUSE.

L'Université de Lille n'a pu être consultée.

Free Literature for Belgian Children.

THE Simplified Spelling Society will be pleased to send free literature to those teachers who may have Belgian children in their schools, and who find the task of teaching them English pronunciation and spelling, a very difficult one. On all sides one hears that the Belgian easily assimilates the grammatical rules there are in English, but with the spelling and pronunciation his difficulties begin.

The pupil's difficulty is also the teacher's. How represent any given sound with an alphabet, whereof no vowel and scarcely any consonant has a stable value ? A correspondence on this subject has been running in the *Glasgow Herald*, where Mr. W. Stewart Thompson affirms that the best way of overcoming the difficulty is by means of the International Phonetic Alphabet, but he admits further that it is a little "puzzling" for a beginner.

We believe that the alphabet of the Simplified Spelling Society meets the case perfectly without the disadvantage of "puzzling" the beginner or anyone else. It is as phonetic as possible without the introduction of phonetic symbols, and can cause no confusion in the mind of any foreigner. Already it is being tried on Belgian children by a schoolmaster of Huddersfield, Mr. J. Quinn.

Teachers who may wish to see the society's literature should send a postcard to the secretary, 44, Great Russell Street, W.C.

CHRISTINA JUST.

Simplified Spelling Society, 44, Great Russell Street, London, W.C., December 15, 1914.

The School World.

A Monthly Magazine of Educational Work and Progress.

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All contributions must be accompanied by the name and address of the Author, though not necessarily for publication.

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SIXPENCE.

CULTURE AND KULTUR.¹

By the Rt. Rev. BISHOP WELLDON.
Dean of Manchester.

THE war now raging in Europe and over half the world cannot fail, among its many unforeseen consequences, to effect a reconsideration of educational values. In the antagonism between Great Britain and Germany, it is not only two systems and methods, but two theories of education which stand as rivals one over against the other before the eyes of the whole civilised world. Englishmen, therefore, and Britons, and all citizens of the British Empire, are bound to ask whether the educational results of the schools, colleges, and universities in all parts of the Empire have stood, and have stood with as complete a success as possible, the testing crisis of international warfare. The subject of my address, then, is "The Principles of Educational Science," but, if I were permitted to give it a secondary title, as so often happens in books, I would describe it as "Culture and Kultur."

Two preliminary remarks it is permissible, and I think necessary, to make upon the war. One is that it proves, as no war in the past has ever equally proved, the importance attaching to education. For the seed-plot of the war was in Germany not the palace or the senate or the council chamber or the mess-room; it was the university, it was the school. German military authorities have long set much store upon the influence of the teaching profession. It was the German schoolmaster, said the great Moltke, who won the battle of Sadowa. When I lived in Germany some ten years after the Franco-German war of 1870, there was, so far as I could judge, among the professors and students in the University of Leipzig, among the men of business, and even among the soldiers themselves, no express ambition of supreme or universal power

over the nations of the world. But, since then, professors such as Nietzsche, Treitschke, and Delbrück have inspired the whole mind and soul of Germany, and above all of Prussia, with ambitious dreams of conquest expanding by sea as by land to the far ends of the habitable globe. They have converted military writers like General von Bernhardi, statesmen like Prince von Bülow, seamen like Admiral von Tirpitz, inventors like Count Zeppelin; financial magnates like Gwinner and Thyssen, they have converted the Kaiser himself.

It is not altogether easy in England to realise how great may be, and is, the effect of academical utterances in Germany. I cannot think of any lectures given by a professor at Oxford or Cambridge as determining, or even as powerfully influencing, the spirit of the nation. Perhaps the late Sir John Seeley, by his lectures, which I myself heard at Cambridge, upon "The Expansion of England," did as much as anyone to awaken the consciousness of empire. For the most part, the English-speaking world draws only too broad a line between academical theories and practical politics. But the philosophical thought which calms and chastens most people, if it touches them at all, is, as Madame de Staël said, apt to inflame the German people, and it has certainly inflamed them of late years. I have been told that not only have the sailors and soldiers of Germany been led to anticipate what they have humorously called "The Day," i.e. the inevitable day of war with Great Britain, as the goal of their hopes, but that schoolmasters and schoolmistresses all over Germany have systematically taught their pupils the lesson of Germany's Imperial title to rule the world, and have enforced it, as a sovereign truth, by text-books and even by maps in which the historical and the actual relation of Germany to the other Great Powers of Europe has become, I might almost say, a living, breathing falsehood.

The war, then, evinces not only the power

¹ From the inaugural address to the third annual Conference of Educational Associations opened in London on January 4th, 1915.

of education, but the peril of a false or vicious education.

It is here that the meaning or bearing of the German word "Kultur" comes into question. "Kultur" has until lately been regarded as the equivalent of the English word "culture." But English men and women suddenly awoke with a startling surprise to the discovery that it does not forbid, and, indeed, appears to condone, if it does not induce, such actions as are felt to be unworthy of a civilised and cultivated nation. The Germans are, or call themselves, cultivated. They profess a supremacy in cultivation. Yet they have violated treaties to which they themselves have been parties; they have invaded and despoiled and devastated the innocent country of Belgium; they have destroyed the University of Louvain; they have bombarded the Cathedral of Rheims; they have sown the ocean with mines; they have desecrated the sanctity of the white flag and the Red Cross. What, then, is "Kultur"? How does it differ from "culture"?

Anybody who considers the general acceptance of the word culture will probably feel that it connotes certain definite qualities or attainments of human nature. It implies knowledge, and that of various kinds—the mastery of the physical world, an acquaintance with the history of mankind, an initiation into the political and philosophical thought of all the ages. It implies refinement, too. The essence of humane studies is, as the ancient poet has said, a mitigation, or an amelioration, of barbarous rudeness.

*Ingenuas didicisse fideliter artes
Emollit mores nec sinit esse ferus.*

But, apart from manners, a cultivated person finds his pleasures not only, or chiefly, in material objects, such as wealth, but in art, science, and poetry. Yet a third element of true culture seems to be freedom. Primitive man is the slave of arbitrary customs; but, as he becomes civilised and cultivated, he is enabled to develop himself upon natural lines, and the very laws to which he willingly submits are the means and instruments of his free action. Liberty, as J. S. Mill conceived it in his celebrated Essay, is essential to progress. There is yet a fourth element which never fails to assert and express itself in true culture. It is sympathy. Knowledge expands the interest, as it widens the outlook. Nobody is a cultivated man, nobody, indeed, deserves to be called a gentleman, unless he thinks of others as well as of himself, and pays regard to their feelings no less than to his own.

It will not, I think, be denied that Germans of the highest intellectual and spiritual calibre,

such as Goethe and Kant, have, in their lives and in their writings, exhibited these qualities; not always in the same degree; for learning and refinement are more conspicuous in Goethe, sympathy in Kant; but they have not been wanting as distinctive features of cultivated Teutonism.

Experience, however, shows that when the word "Kultur" has been used by Germans of late years—I should say, roughly, from 1870 onwards—it has not meant learning, scholarship, art and literature, or it has meant these things in quite a secondary degree. Rather its meaning has been energy or efficiency, and that efficiency not so much individual as national; social evolution, in the sense of successful civil and military administration; financial capacity; commercial enterprise; and, so far as possible, superiority in the rivalry of nations. In a word, the German "Kultur," wholly different as it is from the English "culture," is organised efficiency on the largest scale.

From this definition or conception of "Kultur" flow certain results, either immediate or ultimate. The immediate result is the worship of the State. For it is the State, and the State alone, which is the organ of national efficiency. It is impossible that an individual should attain the same strength or power in isolation, as by incorporation in a great community like the State.

Modern German thought, then, has reverted to the old Greek theory that it is not the State which exists for the good of the individual, but the individual who exists for the good of the State. There is, in fact, no limit to the duty which the citizen owes to his State. Whatever the State calls upon him to do, he is bound to do, and to do readily and cheerfully. It is the paramount authority of the State over individual lives which justifies the whole political and social order of life in Germany, and especially the universal compulsory military service, which Germany demands of all citizens, and has taught other Continental nations to demand of their citizens as well.

But the worship of the State goes yet a step further in Germany. For not only can the State, as thinkers like Treitschke and Delbrück contend, do no wrong in any burden which it lays on individual citizens, but it can do no wrong in any measure which it may think good to take for its own safety or dignity. The interest of the State, whatever it may be, is, in Treitschke's eyes, not only compatible with Kultur, but is actually essential to Kultur. If the interest of the State, then, ever comes into conflict with the law of Jesus Christ, it is Jesus Christ Who

must give way, and not the State. Upon this point General Friedrich von Bernhardi expresses himself plainly.

The State, then, is an object of worship, of devotion, of utter self-sacrifice, because it is through the State alone that individual citizens claim complete efficiency. The citizen can do no wrong if he serves the State; the State can do no wrong if it seeks its own interest. This is the teaching of German philosophers in the latter half of the nineteenth century, and it leads directly to that doctrine which has appalled the mind and heart of Christendom in other countries than Germany, viz., the glorification of war.

History explains in some degree, if not altogether, this attitude of mind among educated Germans. At the beginning of the nineteenth century, Germany was no more than an inert and ineffectual congeries of small States; it counted for nothing as a whole in the economy of the nations. At the end of the nineteenth century, Germany was the most commanding military power in Europe and in the world. She had attained her pre-eminence by three victorious campaigns in 1864, 1866, and 1870. She had, in the words of the late August Bebel, the Socialist leader, become "drunk with victory." She discerned a future of infinite scope and force opening before her eyes, and she thought it could be realised only by war.

Education itself, or *Kultur*, has been strangely enough regarded in Germany not on its ethical, but on its material or physical side; not as a means of civilisation, refinement and sympathy, but as an instrument of conquest.

It is now possible to see clearly what *Kultur* is, and how it differs from culture. *Kultur* is not a moral quality at all. It acknowledges no moral element. It is, as I have said, organised efficiency; it is the national achievement and perfection of the means by which a State wins the victory over its enemies, and attains supremacy in the world. The doctrine of the superstate may, I am afraid, be traced backwards to Darwin's "Origin of Species," if not to Hobbes's "Leviathan"; but no people has thought of applying it to international politics with anything like the consistency and severity of the Germans. Perhaps the extreme instance of its application lies in the theory avowed by such writers as Bernhardi, that small States are not entitled to exist, as they do not, and cannot, fulfil the proper object of a State's life, which is power, a doctrine illustrated in the German treatment of Poland, of Schleswig-Holstein, and quite recently of Luxemburg and Belgium.

The question arises, then, Is there any element of truth in the German ideal of education? That the ideal is not wholly right is plain enough. But is it right in any respect, and, if so, where and how far is it right? For my own part, I think modern Germany has rightly seen that the true test of education or culture is citizenship. But I think Germany has been altogether wrong in her estimate of citizenship itself.

It is always wise in such a field as education to establish a leading principle, and then to try efforts and achievements by reference to this principle. Now I hold as strongly as I hold any conviction in the world that the test of education is always this, Does it, or does it not, produce good citizens? The war has only shown in high relief the educational importance of citizenship; but the importance has always been the same, whether it has, or has not, been realised by parents and teachers. You will let me then indicate certain inferences which it is necessary to draw from the thought of citizenship as determining education.

The first is, of course, the value of education itself. More and more as history proceeds the State requires that its citizens should all be educated. For education is necessary not only as guarding the State against the evils and perils which are always liable to occur where the population is left in ignorance, but as strengthening it in industrial, scientific, not to say in moral, competition, among the nations of the world. The battle is now not to the swift or to the strong, but to the educated. Yet it was only in the year 1820 that Brougham first introduced into Parliament a Bill for the general education of the people; and more than fifty years elapsed before such a Bill was placed as an Act upon the Statute Book. To-day nobody doubts that education is not only an element, but is the first and foremost element, in the national life.

Again, if education holds the key of national efficiency, it follows that the few years which are spent, and can be spent, by children in the schools must be utilised in the best possible manner. There must be no waste of time; there must be no sacrifice of such subjects as enhance civic efficiency to useless, or nearly useless, embellishments. Half a century or more ago schoolmasters and schoolmistresses, or such of them as thought about education at all, found a difficulty in filling up the school hours. It was then that the practice of writing Latin and Greek verses became rooted in public-school life; and unhappy boys, who were never encouraged or allowed to write a line of poetry in their own language, were, without the slightest gift of poetical composition, forced to spend many hours month after

month in producing what could never be called poetry, and seldom merited to be called versification, in a dead language. It was then, too, that girls, only less unhappy than the boys of their own age, received whatever education was given them under the heads of music, deportment, and that mysterious accomplishment, the use of the globes. There is some reason to fear that education to-day is not wholly freed from the taint of civic uselessness. Much as I appreciate and admire the study of the Greek language, and great and lasting as is the debt which I owe to it, yet it seemed to me when I was a schoolmaster, and it seems still, that amidst the multiplicity of subjects which are now properly admissible to the curriculum in public schools, to demand a knowledge of two dead languages from all boys, or from all boys who are going to the University, is, if the demand is serious, to cramp and fetter the intellectual development which ought to be left as free as possible, and, if it is not serious, to sacrifice studies of higher value at a critical age for a study which is taken up only to be dropped as soon as it has served its purpose in examination, and then to be forgotten for ever.

The ideal of citizenship prescribes not only that a ladder should be set up from one grade of school to another, and in the end from the elementary school to the University, but that boys and girls, as they climb this ladder, should possess a common basis of knowledge—for whatever a person knows is bereft of half its value unless other people know it too—and that no artificial difficulty should be put in the way of their acquiring and retaining this common basis of knowledge.

It is possible that, when citizenship is regarded as the true end of education, one great reform which I have much at heart will not be so far off as it now seems to be. I cannot help thinking that many teachers have for some time past been eager to attain results at much too early an age in their pupils' lives, and to attest those results by the rude and crude method of public examination.

Examination as a means of testing efficiency is at the best exposed to grave criticism. It is a test not of knowledge or ability, but of such knowledge and ability as can be displayed in certain particular circumstances. It demands an accuracy of judgment which may not be always found in the examiners. Above all, it encourages in the young a competitive spirit; it fosters that spirit to the highest point; yet it is not competition, but co-operation, which best serves the interests of humanity. It often happens, too, that competition for scholarships and exhibitions gives the rich an undue advantage over the poor, as success is difficult, or

impossible, without a special preliminary training, and it is only the rich who can bear this expense. The main argument for competitive examinations is that they have been, and are, safeguards against favouritism. But publicity or public opinion is as much a guarantee of justice as examinations; and I cannot help thinking that, in so far as examinations are necessary, the attaining of a standard, rather than supremacy over all competitors, when, as generally happens, that supremacy is noted by marks, will be found ultimately to prove the best means of selection, as it does not exclude a personal estimate of qualities which do not naturally lend themselves to the test of examination.

At all events, it follows from the guiding principle of civic duty, as the true educational goal, that scarcely any mistake can be more serious than the habit of looking for results at too early an age. Perhaps it may be permitted me to repeat the statement, which I used to make when I was a schoolmaster, that the criterion of a schoolmaster's success is not what his pupils do and are at fourteen or eighteen or twenty-one or twenty-three, but what they do and are as citizens in adult life. The premature appreciation of educational results has been, I think, an almost unspeakable evil. It has led schoolmasters, and in some degree schoolmistresses too, to think of the scholarships and prizes won by boys and girls as the educational results best worth seeking.

May I suggest, therefore, that every teacher should be in greater or less degree a student of psychology? Education is, in the main, a practical science; and a teacher may be familiar with educational theory and yet may in many schools find it almost useless if he or she lacks the practical gifts of the teaching art. A novice in the educational profession can sometimes learn more by an hour's talk with an experienced schoolmaster or schoolmistress than by a year's study of books. Still, it is well he should know what the masters of educational science have thought and said from Plato and Aristotle to Comenius and Froebel, and in modern times to J. S. Mill, Herbert Spencer, and Montessori. Above all, it is when he understands the nature and development of a child's mind that his training of the child will be most successful. For he will know then how much he may demand of a child in the present, without sacrificing the child's future. He will realise that not all subjects, even in literature, are equally suited to all ages; that subjects are often better learnt successively than simultaneously; and that education, which has perhaps been the nightmare of children's lives, may become an

interest, and even a delight, if it is carefully regulated in accordance with their faculties and dispositions. The cruelty which has disfigured education in all the ages until now has displayed not so much the original sinfulness as the permanent ignorance of their teachers, and, I am afraid, of their parents as well.

But in education all will be subordinated to civic duty. It is for the service of the State that the physical health and vigour of children, their intellectual culture, their artistic and emotional development, their moral discipline, their spirituality, are regarded as objects of supreme interest. The difference which I have tried to emphasise between "culture" and "Kultur" is a bitter warning against a one-sided or imperfect education. For the crying fault of Germany has been that it has thought of German advance alone, and that an advance only in strength and power over Europe, and ultimately over the world.

I plead, then, for patriotism as an element in English education; but I plead for a wise and sane patriotism. There is a signal outburst of patriotic feeling in the nation to-day. How far it is due to recent teaching I cannot say. But every teacher should, I think, inspire his or her pupils with a sense of responsibility for the Empire. Empire Day is becoming a recognised festival. The Union Jack, if its history is known and taught, is an inspiring lesson in Imperial history. I am afraid it is difficult to admire many of the national songs which have achieved popularity, whether in the present or in the past. "Lilliburlero" is not much better than the "Jingo" song or "Tipperary." "Rule Britannia" is defective in grammar, and still more defective in taste. Of the National Anthem itself, as a literary composition, apart from its ancient, hallowed associations, the less that is said, perhaps the better.

But the patriotism of which I speak, lofty as it is, is but a stage in the gradual ascent of humanity. As the family is the school of training for the State, so is the State the school of training for the world. German patriotism has gone wrong because the Germans have set up the State, and war, which creates and preserves the State, as a brazen image on the Plain of Dura, and have bowed themselves to the ground before it. They have forgotten, or have seemed to forget, that greater than the State is humanity, and greater than humanity is God. It is only when all the powers, not only of individuals, but of nations, are consecrated to a Divine end, that the true progress of the world, which is the subordination of the lower human instincts to the higher, can be ultimately assured.

EDUCATION DURING THE ADOLESCENT PERIOD.¹

By the Rev. E. F. M. MACCARTHY, M.A.

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MY position in this chair will be used, I think, to advantage by arresting your attention and fixing it upon the more immediate importance for our national welfare of much greater economy of our *industrial* forces which will have to replenish the wastage of war. With our attention limited to the educational side of that aspect, let us concentrate our minds upon the formidable gap which exists for the vast majority of our population between the early close of a child's elementary schooling and the threshold of adult citizenship, and upon the imperative necessity of filling it more effectively. Secondary education, which is our especial province, is not a watertight compartment between the lowest and highest forms of education, and it lies within the sphere of our duties, therefore, to take cognisance of and to survey as much the conditions of the primary schools on one side of us as of the universities on the other. Now for this purpose there is a strong call for the exercise of the virtue of detachment—a greater virtue for schoolmasters than charity, for, of these three, charity, knowledge, detachment, the greatest is detachment—the power to rid oneself of the bias of one's own self-interest and realise the point of view of those who take another side.

I have armed myself with whole battalions of figures, not as an enemy to attack, but as an ally to strengthen, the unorganised ranks of "education other than elementary," brought up by the faulty generalship of the Parliament of 1902 between the regular armies of "elementary" and "secondary" education—the left wing and centre of England's fighting line against ignorance.

Now the educational periods of a child's life (excluding the anterior infant age and the posterior adult stage), conforming to physical, psychological, and mental changes, are roughly eight to twelve, twelve to sixteen, sixteen to twenty.

All our recent battles in educational affairs seem to rage round the age of fourteen, which is in the middle, and not at the end, of an educational period, but which happens to be temporarily the statutory age up to which attendance can be enforced; but, in that purely legal and uneducational position, it is merely the successor of thirteen and twelve in the past and the precursor of fifteen and six-

¹ From the presidential address delivered on January 5th 1915, to the Incorporated Association of Headmasters.

teen in the future. Educational curricula must be considered apart from "compulsory attendance." All this talk about boys "marking time" in an elementary school between twelve and fourteen, "blind-alleying" in wage-earning or in secondary schools between fourteen and sixteen, and so on, arises from the battle of various interests—largely selfish interests—ding-dong backwards and forwards over the unreal frontier line of "fourteen." Is elementary education to stop at fourteen? or be beaten back to twelve? or advance to sixteen? Is secondary to begin at sixteen? or at fourteen? or at twelve? Where does technical, vocational, etc., come in? Now all is fairly calm and settled up to twelve, and all is fairly serene and clear from sixteen onwards. We need to wipe fourteen out of our thoughts and discussions altogether, and then take a broad-minded and comprehensive view of the adolescent period of twelve to sixteen. Plan proper four years' "lines of communications" for elementary education to find its crowning years up to sixteen, and for secondary to find its true beginnings from twelve, working side by side between twelve and sixteen, and both co-operating and co-ordinating where they meet in this age-area of the educational field.

It should not be a question of delimiting and degrading the elementary school by low limits of age and curriculum; it is not a question of calling everything secondary after fourteen. It is not a question of calling children off at an early age from all education and devoting them to a "vocational training." Let elementary and secondary both keep their standards high, and work in freedom for their own ideals side by side. Both are needed, for there are pupils for both—thousands who will gain most by remaining in the elementary school, and must get there all they are capable of receiving; and thousands who need a real secondary education conducted from at least twelve years of age on its traditional lines of being a preparation for the universities, the learned professions, and the higher careers of commerce and manufacture.

And now I will ask you to follow me with a few figures to show the magnitude of the *hiatus valde deflendus* in the educational provision for children of the middle period—twelve to sixteen.

I take first the figures of the whole country. Statistics (Board of Education, Cd. 7,674) show that the total number of children of all ages in public elementary schools is 6,000,000; the number of children who leave school in one year (allowing for deaths, blind, deaf, etc.), and omitting the leavers under eleven years of age, is 658,000. The number of ex-public elementary pupils of eleven years of age and

upwards admitted to all types of secondary schools during the year is 30,000,² and about 4,000 find places in higher elementary schools. These figures represent about 34,000 out of the 658,000. What becomes of the remaining 620,000? Each year this annually appearing army of young persons leaving the elementary school and standing on the threshold of life appears before the eyes of all who have eyes to see.

Next let me quote the figures for Birmingham. There (Report of Birmingham Education Committee, 1914) the total number of children of all ages in public elementary schools is 150,000. The Birmingham bye-laws exempt a child twelve years of age from attendance at school if he has passed the seventh standard; and the total number of children who at the time of leaving were exempt from school attendance and *did not intend to attend any day school again* is given as 13,100. Adding to these leavers (1) the children who left to go to the higher elementary school, which has since become a junior commercial school (a secondary school under Article 42 of the Technical School Regulations), roughly 250, (2) the children who gained admission as free-placers to secondary schools, endowed and council, about 300, we get the total number of leavers in one year to be 13,650, out of which 550, or 4 per cent., passed on to a secondary education.

Now, I do not say that any large proportion of these children leaving an elementary school are prepared for continued day-school instruction. But experience in Scotland and elsewhere has shown that some 10 or 12 per cent. represent a distinctly ultra-normal section of the mass—a section which is a precious national asset, and should be specially cared for. My contention is that these ultra-normals are those for whom an education beyond the ordinary code standards should be provided. The statistics I have given show that 4 per cent. of these ultra-normals find their way into secondary schools. I am concerned for the 6 per cent. who are now cast adrift and do not attend any day school after reaching the age of twelve possibly, and certainly after reaching fourteen. This will include those who missed by a bare mark or two being included in the 25 per cent. (or less, according to locality) of free places in a secondary school.

Just pause to think of them for a moment. What guarantee have we that every promising child who seemed to justify his receiving a free secondary education shall get his opportunity? Apart from the difficulty of discriminating

² This is a generous figure, after deducting only some 4,000 for the children of non-industrial parents who attend a public elementary school for their education preparatory to their entrance into secondary schools as fee-payers

between degrees of "promise" at so early an age as eleven or twelve, think of those who just fell short of the number of marks necessary to obtain one of the vacant free places. A few importunate throbs of the forehead caused by nerve-strain, a slight slip in the working of an arithmetical problem which has yet been grasped, some small lapse of memory in regard to time or place in history or geography—and what a difference! Those who have been behind the scenes in scholarship examinations know that the loss of a few marks in the above way may mean the difference between a brilliant professional or commercial career, which would have enriched his nation—and obscurity. A little less and what worlds away! This is what occurs now unless, as very rarely happens, there is a higher elementary school near the child's home.

To sum up, the 6 per cent. of derelicts or disinherited amounts for the whole country to 37,000 children annually, and for Birmingham alone to 800 annually. This is a fair measure of the terrible wastage of the intelligence of our industrial population which is going on at this moment. The provision of accommodation for these pupils to receive two years' further training in public elementary schools would need 74,000 additional school-places throughout the whole country, and 1,600 in Birmingham.

Let me say a word here about "higher elementary schools." The conditions for such schools laid down by departmental regulations have deterred local authorities from entering upon a risky and costly experiment. The main obstacle is the cost of buildings—a separate building or a higher department adjoining an ordinary school, a 12 square feet of floor space for each scholar, a separate staff unconnected with the ordinary elementary school, etc.

The local authorities of the larger centres of population—London, Manchester, Birmingham—have either tried to work these schools and have given them up, or have fought shy of them altogether. There are only fifty-two of these schools in England and Wales, with some 12,000 pupils. The number of such schools has been nearly stationary in recent years; there are scarcely any except in comparatively small places which happen to have no secondary schools in the neighbourhood.

As I have just said, the London Education Committee has not adopted the higher elementary school minute. After making very ample provision for passing on its ablest pupils to secondary schools, the London Education Committee has still found an army of children deserving an education somewhat higher than ordinary elementary and yet not suited for

going through a secondary course; and so, with the consent of the Board of Education and subject to all the regulations of public elementary schools, including inspection by the Government inspectors, this Committee has evolved a new type of elementary school. Through its own inspectors and head teachers a capacity-catching examination is held, and a careful selection made, of promising children who are not less than eleven years of age, and whose parents are favourable to the children having a four years' course of instruction under the elementary education code, but supplemented by instruction "having an industrial or commercial bias." And thus "marking time" in an elementary school and "blind-alleying" in wage earning or in a secondary school are equally avoided.

There are some sixty of these schools in the London area at the present time, and they are growing in favour. The success of the London scheme will doubtless encourage other large cities to develop elementary schools on similar lines adapted to local needs. Manchester, I understand, is already following suit. I should like to see my own city taking up and solving in its own way the same momentous problem.

And a word about "junior technical schools." The regulations for these have only recently been issued, and the extent to which they will be used is largely a matter of conjecture; but so far as things have moved in that direction, this type of school has not added appreciably to the existing facilities for the secondary education of ex-public elementary pupils; the regulations have simply encouraged existing technical institutes or day technical (including commercial) classes to convert themselves into "junior technical schools" in order to admit pupils of a somewhat younger age, and earn grants for them. This will doubtless be a useful development in enabling these institutes to introduce younger pupils into their classes before they have had time to forget the elements of arithmetic, etc., which they had acquired in the elementary school.

It is difficult to see that either the higher elementary schools or the junior technical schools are anything more than mere make-shifts devised by this or that energetic official of the Board of Education to hold out against the bombardment of expert critics or to stave off the day of the complete reversal of the Cockerton judgment and the hour of the restoration to local authorities of the freedom, of which they were deprived by the Act of 1902, to continue the education of their pupils beyond the bare rudiments which now constitute the cruelly narrow curriculum of the delimited elementary schools, and to carry

them on to subjects (formerly known as "specifics") appropriate to an advanced elementary education.

It is difficult to see any indications that either of the Board's schemes is based on a large outlook over the field of national education. As I make this survey of the present condition of things, I am forcibly reminded of Theodore Hook's story of the humane man who proposed to supersede the necessity of climbing-boys for chimney-cleaning by letting a goose down the chimney by a string, which would by the fluttering of its wings effectively clean the whole flue. The lady to whom he proposed this plan said that she thought it would be very cruel for the goose. "Lord love your eyes, ma'am," said the inventor, "if so be as you are particular about the goose, a couple of ducks will do as well!"

Taking up my parable—in some such fashion the Board of Education, having had brought home to them the difficulty of boys climbing from the elementary to the secondary flue—both vertical enough when you get into them, but with an awkward horizontal cant in the middle to pass from the one ascending flue to the other—invented a percentage of free places to ease the climb. But when several difficulties were alleged, and hardships asserted to be unremoved by the suggested remedy, the Board has seemed to say, "Lord bless you, if you see so much difficulty and hardship in this free-place proposal, we have a couple of other schemes; there are the 'higher elementary schools' and the 'junior technical schools,' which will surely meet your views." But there is hardship in all three of these plans as far as giving power "to every child in the kingdom" (as Huxley said) "to climb as far as it is able to go."

To remove this hardship completely, what is wanted is either some such scheme as that which the London Education Committee has so successfully elaborated, or the machinery for carrying on the education of the abler pupils who do not gain admission to a secondary school by supplementary classes or higher grade developments as in Scotland. In Scotland 5·1 per cent. of the total number of pupils receive advanced education in supplementary classes and 2·9 per cent. in higher grade schools, *i.e.* 8 per cent. in all. Put this against 0·2 per cent. in the higher elementary schools in England; and Scotland, be it remembered, has, in addition to the above, more secondary schools in proportion to population than England. Why does not a similar provision exist in England for a *continuation of elementary education without breach of contact of any kind, with the same curriculum, vocationally supplemented if you will, under*

the same teachers, in the same buildings or in separate buildings fed by a group of schools, and situated in the very centre of the children's environment? You may well ask why. The answer I should personally give may not gain a hearing, but ask the Minister of Education, ask your representatives in the British House of Commons, and press for an answer until you get it.

THE BOARD OF EDUCATION AND LEAVING EXAMINATIONS FOR SECONDARY SCHOOLS.¹

By E. SHARWOOD SMITH, M.A.

Headmaster of Newbury Grammar School.

I.

I SUPPOSE the first thought of nearly all teachers when they read the pamphlet of the Board of Education on examinations was that here at last a step forward had been taken. Hitherto the attitude of the Board to all external examinations had been mainly negative, if indeed it might not be more accurately defined as destructive; and though there were a few perhaps who found that attitude eminently satisfactory, to the majority it seems to have been a stumbling block. At last, then, a constructive policy has been outlined, and though the outline is very faint and dim, and though, as I shall attempt to show, the proposals of the Board are not particularly heroic (nor founded on any real philosophical insight into the problem), yet it is something, at any rate, to find the body responsible for education in this country ready at last to deal with an intensely important and difficult question. Moreover, it must be granted that the Board has shown a good deal of wisdom in not formulating straight away a cut-and-dried system, and also great consideration to teachers by inviting criticisms and suggestions as to its policy—an invitation which I sincerely hope will be taken advantage of to the utmost.

There is a chance, though I am afraid a slight one, that out of the confusion that at present confronts us some method may finally be devised which will not advantage solely the examiners or the examining body, but mainly the schools, the pupils examined, and the general welfare of the State. At any rate, I suppose in the view of most people concerned in education it is advantageous that the examination system should be methodised. I suppose that that thrice-blessed word "co-ordination" holds within itself great possibilities for the future of our schools, and that a

¹ A paper read before the Teacher's Guild on January 6th, 1915.

definite and abiding standard of attainment is a thing in itself greatly to be desired. At any rate, the voice of many teachers has been heard in the land demanding the introduction of the water-tight system such as they told us obtains in Germany. It may be that recent events have moderated their enthusiasm, but if I may judge from the expressed opinion of eminent teachers that is the desired consummation. For a moment we will leave the question of whether they are right or wrong, and let us try to see how the Board's proposals will help forward their desires. First of all, then, we are informed that every school receiving grants will be required to submit proposals for an annual examination by one of the University Examining Bodies recognised by the Board. At first sight there is nothing very startling or revolutionary about that, but I am not so sure when I look at it a second time. Every school every year is to have its work—or, at any rate, the work of one of its forms—tested by a written examination practically imposed upon it from the outside. Of course, I know that in the case of a large number of schools this proposal simply recognises a fact. It makes universal what is all but universal now—at any rate, in boys' schools. It merely means in other words the slight tightening of a screw that has already bitten deeply into the living tissue of secondary schools. I do want to lay stress on the tightening. Hitherto it has been possible in some cases and some years to escape from this tyranny—I am using the word in its proper sense. Henceforth there is to be no loophole whatever. Every school every year an external written examination.

The Board has often professed a desire to encourage educational experiments. It is a little difficult to see why it should not encourage the great experiment of a school tested simply by inspection and existing without any external examination whatever. Possibly it has found the results of an externally unexamined school unsatisfactory. But is it certain that the failure is due to the lack of examination? One would like to feel quite sure before the way of escape is finally closed. However, we will let that pass. The next paragraph is much more debatable. There are to be two grades of examination—one designed for a form, the other—apparently—for individual pupils. The lower examination is to test the results of a general education, and the standard of a pass is to be such as may be expected of pupils of reasonable industry and ordinary intelligence in any efficient secondary school! (Delightful phrase, and fortunately as vague as delightful!) Who is to decide what is reasonable

industry and ordinary intelligence? Surely in strictness no pupils whose qualifications fall short of reasonable industry and ordinary intelligence have any right at a secondary school at all. Therefore in theory they all ought to pass when they get to the requisite age. Possibly that is what the Board means, and it is holding out this leaving examination as a bait to tempt boys to stay longer at school. This we should all admit is a laudable design, and if the British parent can be induced to see the value of the certificate, it may have some effect. And that, of course, brings us to the crux of the whole question. The value of the certificate depends entirely on whether the professional bodies will accept it. Surely there ought to be no doubt about this matter. Surely if the Board gave its assurance that the standard would be no lower than that of an examination already accepted the question could be settled before the examination was introduced into the schools. There does not seem to be the least real reason why this should not be done.

The result of this regulation means, of course, that no pupil will be placed in the form to be examined who has not a first-rate chance of passing the test. Obviously. No school could afford to have more than a very small proportion of its pupils fail. Would not our living thereby be endangered? And naturally, of course, not only would the selection be carefully made, but all the best energies of the school would be devoted to the form that has to submit to this examination. The pupils would have to undergo preliminary tests to see if they could pass, and I am afraid in many cases some would be quietly removed from the form shortly before the examination. Quite rightly so, many will reply. Obviously if they are not fitted to pass a standard which may be expected of pupils of reasonable industry and ordinary intelligence, they have no right to be so high in the school.

But do we really all of us feel certain that the passing of an external written examination is the only test of a pupil's ability to profit by the work of a particular form? I wish I had no misgivings on this point. It would make the work of a teacher, and particularly of a headmaster, very much more easy in one respect, though it would increase it in others. I know I shall be told that this system has been tried for many years in Germany—or perhaps I should have been told so some months ago. Are we as certain as we were a month or two back? Do we not feel that, after all—simple and reasonable as the test may seem—there may after all be something lacking in it? Have we not all had, not one, but many pupils in our time whom we could

unhesitatingly describe as possessed of reasonable industry and ordinary intelligence who absolutely refused to pass any written examination at all? I affirm here most positively that this has been the case with some of the shrewdest and ablest boys in the general affairs of life that I have had to deal with. Many of them are now filling responsible positions, particularly in the colonies, and when they write to me I am in doubt which to admire more: their admirable power of expressing themselves now, or their utter indifference to the value of ordinary written examination when they were at school. I shall be told that it does not matter; that such boys can do quite well without the label proposed—as indeed they do already. I reply that it matters very much. At present there is no need to present them for an external examination; if it is to be made compulsory, they will either have to be kept down below their proper position, which is bad in itself and disheartening to them, or else to be allowed to fail. I do not know which alternative is the worse. But this examination is meant mainly as an entrance to the professions, you will say; and for the professions, at any rate, such pupils are obviously not fitted. First of all, I deny this. In many cases they are eminently fitted for them; secondly, however the examination is meant, it will be regarded as a test of the school as a whole.

Thirdly, anyone who fails will go about through life with a certain stigma attached to him. Two or three days ago I met an old pupil who had just left a lonely and responsible position in a remote region in Morocco in order to join the new army. Before he was in Morocco he had lived in India for a short time as an agent in an important business. Everyone who had come in contact with him had realised his capacity, and so, fortunately, he had no difficulty in obtaining a commission. "I never did and never could pass a written examination," was his remark to me, "but I can lead men." Indeed, he was a born leader of men. But under our present system, and still more under that which the Board proposes, he would be debarred from the army except in the stress of a great emergency. There must be hundreds such. Truly we are learning, or ought to learn, many lessons from this war. Let us consider another argument. Most of us teachers realise that the greatest benefit we receive from our calling is the opportunity to go on learning ourselves. Indeed, it is a truism that if we are able to be of any value as teachers we must go on learning. Yet how many of us would like to adapt our reading to the views and ideas of an external

authority? If I may be permitted to give a personal experience, I find that the two subjects which engage most of my leisure hours are just those I was never examined in either at school or at the university.

This has always struck me as significant. Some will say that it is exceptional. I can only say that I have found it to be the case with many other teachers of my acquaintance. Whenever I see an examination paper, even of the junior local standard, I devoutly congratulate myself that I have not to pass it. Surely it is what we want to know ourselves that educates us, not what others force us to know. The trouble I find with many teachers and with most examiners is that they forget their own schooldays and their own examination experiences. From how many of our teachers did we really learn anything of any value to us in our lives? Nearly everyone I have questioned has the same tale to tell. There was usually one—rarely two—from whom we learnt everything, and I maintain that in almost every case that one was a teacher who had a supreme contempt for examinations, and taught without any reference to them. Usually he was a man of striking originality who defied all the accepted canons of teaching. Often he was eccentric, and we laughed at him while we learned from him and loved him in our hearts. Such men are very rare in our schools to-day. We are paying a high price for our organised efficiency. The steam-roller has gone over our souls.²

But I shall be told again that I am dealing with exceptions, and that one cannot legislate for exceptions. I maintain, on the other hand, they are just the persons you ought to legislate for, unless you desire a dull, drab uniformity to blight our civilisation hopelessly. Still, let that pass. Let the exceptions go unlabelled and unrewarded, with how great a contempt for education in their souls I do not care to estimate. But if we pause for a moment to ask why boys of this character do so often fail in examinations, we shall find it due in the main to two causes. Obviously they are not all lacking in intelligence, nor are they by any means deficient in industry. But ability to pass a written examination depends almost entirely on memory, and a good memory means a memory for facts. It is not seldom found that children who lack it are really more intelligent than those who possess it. The other reason, of course, is that many children develop much later than others. Very often they are by no means the worse for it in the end.

² "Tous ceux qui ont fait accomplir un progrès à l'humanité ont été essentiellement excentriques et n'ont pas eu peur qu'on se moquât d'eux." From a Notice sur Molière by Émile Faguet de l'Académie Française

Let us go back to this junior examination. It is intended first to label candidates as having reached a certain standard, and then to distinguish those whose merit is pronounced higher as fit for matriculation. To what end this dual system? Surely a boy of sixteen or seventeen who is possessed of reasonable industry and ordinary intelligence is fit to pursue his studies at a university when he reaches the university age. He certainly is for any university with which I am acquainted. Are the universities to exist only for pupils of unreasonable industry and extraordinary intelligence? If so, a wonderful change has come over them of late years, or is to come over them in the near future. Moreover, there is the danger of a dreadful competition between school and school to get as many passes in proportion to the numbers and as many "merit" marks as possible.

Here may I state again parenthetically that it seems singularly unfortunate, seeing that the Board has had the advantage of consulting with the universities, that it will apparently be unable to come to an agreement as to what standard the University authorities expect before the new examinations are launched. Surely it would be perfectly possible. What is the use of setting in motion a vast machinery for the purpose amongst others of facilitating entrance to the Universities without being sure whether the Universities will accept it? Finally, in this lower examination there are to be four main groups, one of which is incapable of being tested by a written examination. Happy group and happy teachers in that group. Knowing nothing of their particular subjects, I feel almost tempted—on the heuristic principle—to take them up. And, speaking seriously, is it not in the highest degree probable that the trend of secondary education will be very largely in the direction of those subjects? There is a terrible neglect of art at present. In many schools in the future I imagine that the literary or memory output will be considerable. How, then, will the pupils of these schools be tested? Or are they also to be unlabelled and unrewarded altogether?

Again, I have very grave doubts myself whether it is either necessary or advisable that all candidates should pass in the three main groups specified. I know that premature specialisation is anathema, but I am not sure that a little knowledge of many things is not very much more dangerous. My own belief is that far too many subjects are attempted now, and that the simplification of the timetable is most desirable. I should like to see more attempts made to discover the strong points of our pupils and to concentrate on

those. We fritter away their time far too much now. We now come to the second examination, and about that I have few criticisms to offer. I presume in this case the pupil and not the form will be the unit, otherwise, of course, it will be useless for the smaller schools. Indeed, the whole result of the system will be to glorify the big schools. Also I presume that each pupil is only to take the examination once—that point, it seems to me, ought to be decisively laid down.

The eighth regulation is obviously just. I believe emphatically in free trade in education, and there are pupils who, for reasons of health or temperament, are better taught away from schools. Also I hope sincerely that some schools will manage to escape being pronounced efficient by the Board. It gives, of course, a magnificent opportunity for the crammer, but then what right have most teachers to throw stones at the crammer? He is not only to be found in what are known as coaching colleges or establishments. As examinations are at present conducted he is a useful and indeed essential member of society.

Regulation nine is the only one, it seems to me, which really shows an educational advance. Obviously, teachers should be consulted, and should submit their own syllabuses for examination. Why does the Board spoil the effect of this concession by the remark that this provision is suggested mainly for the benefit of schools with rather special aims (What does the "rather" mean?) or doing work of an experimental character? Every school is, or should be, doing work of a "rather" special character or work that is experimental. If it is not, it is almost useless, and personally I would carry the provision further, and insist that schools *must* submit their own syllabuses. They need not always be accepted. Here only is there a chance to get out of the groove of convention. Were I an inspector or examiner, the character of the syllabus submitted by a school would help me greatly in estimating its efficiency. It sounds also like a gracious concession to allow headmasters to submit an estimate of the relative merits of each candidate, but why not the absolute merits, too? The former privilege will probably, in practice, prove quite nugatory—the latter would be of considerable value, and if conceded would go far to mitigate the mischief of the examination. No one will, I think, quarrel with the determination of the Board to be the co-ordinating authority so long as it works almost entirely through its Advisory Committee. As for the granting of certificates, I cannot, as I have said before, see that they will be of any great value, but the principle of stating the

school of a candidate and the various details of his school life may be useful at the outset of his career.

Personally, I have no quarrel with the regulation forbidding the preliminary local examination, or indeed the junior, but that is because it accords with my own inclinations. I cannot see why, at any rate for the junior examination, if it still exists, the principal of the school may not be allowed to use his own discretion. It might be useful for an individual boy. Are teachers never to be trusted?

Frequent conferences are to be held, we are told, between the inspectors and the Examining Board, and in all cases the inspectors' report on a school is to be submitted to the examiners. This sounds an excellent arrangement, but in practice how will it work? I am not sure that I quite understand. Take an instance. A and B are perilously near the border-line of failure, but they come from a school highly reported on by the inspectors. C and D are in exactly the same position, but their school has not met with the same approval. Are C and D to be ploughed then, and A and B to be allowed to pass? If so, it would seem grossly unfair to C and D, unless their headmaster's opinion of their *absolute* merits is to be respected. Again, I greatly fear that it will be rather the result of the examination that will influence the inspectors' reports than *vice versa*. It is really bound to do so, and I suspect that is what is aimed at. Some may regard this result with equanimity, to me it is the beginning of evil.

Finally, it is obviously right that if the Board imposes this examination the Board must pay for it. Whether the results obtained will be worth the expenditure of the State is a very different question, which time alone can answer.

On the whole question of the machinery of examinations, then, it will be seen that I have very little to criticise in the Board's proposals, and, as I remarked before, those who desire a uniformity of standard will probably have their wishes gratified to the full if these proposals are put into effect. And here, it seems to me, we come to the root of the whole matter. Is it desirable that there should be a uniform standard? Will such a system help forward education generally? On this point I hold very strong opinions, which I am afraid I must inflict upon you for a little longer, though I will try to be as brief as possible. Here is my quarrel with the Board. My position is that it has begun at the wrong end altogether. I wish it had first made an exhaustive inquiry into the real result it desires should be achieved by our educational system.

It has begged the whole question. It has laid it down that written external examinations are essential, and it has directed all its efforts to devising suitable machinery for making them as efficient as possible. Let the Board see to it that it has not, no doubt with the best intentions, done education an irreparable harm. No doubt it will make more easy the process of rapidly summing up what a particular pupil has learnt with a view to examination, or what a particular school has achieved in forcing as many pupils as possible through the examination mill. For let us make no mistake. The whole energies of each school will be bent and concentrated on that examination. It will be the *τέλος*, the final end and aim of all the work and all the activities of the school. Once a school has got a large proportion of its pupils to satisfy the examiners, it may consider itself to have achieved its purpose. I am speaking mainly for the smaller grant-earning schools.

Can any thinking teacher view such a consummation with satisfaction? Surely not. Subjects will and must be taught with a view of defeating the examiner, and not with a view of their real educational importance or their bearing on the life and character of their pupils. I shall be told, I know, that this can be prevented by a wise and considered choice of subjects and of teacher. I reply that it is impossible. If you have to pass a given number of pupils through a given examination, if you are to be tested by that standard, not if you were an archangel from heaven could you really keep your mind fixed consistently on any other purpose. In vain you tell me the examination will be so easy that intelligent and intelligently-taught pupils will take it in their stride. No doubt many will do so, especially those who have the faculty for rapidly assimilating useless information, especially the servile transcribers of other people's opinions. But my contention is that it is not in human nature to rest content with any such result. The stride will be lengthened, the pace will be forced. "If every one passes," we shall be told, "what is the good of it?" The horn of the crammer—in school and elsewhere—will be exalted, and the soul of the true teacher will be brought very low. Written examinations conducted by an external authority, however much it may pretend to the collaboration of teachers, cannot have any other effect. In practice, the teacher's opinion will be often disregarded. Is he not an interested party? We shall witness the introduction of a payment-by-results system. Why was that abolished in elementary schools? Does anyone wish to see it restored there? I believe that there are more

than one thinks who in their heart of hearts do desire this, but openly they do not state it, and I have never heard any such wish from anyone whose opinion should be respected. The improvement in elementary schools has been extraordinary since the change. Witness, if witness were wanted, the behaviour of the men in our Army in the present war. But if this proposal is carried into effect there is a chance of our having it in a pernicious form in our secondary schools.

(To be continued.)

THE TRAINING OF AN INDUSTRIAL AND A COMMERCIAL ARMY.¹

By JAMES GRAHAM.

Secretary for Education, Leeds.

WE are now in the midst of the greatest struggle that the British Empire has ever been engaged in. The outcome of the struggle involves not only our existence as a nation, but the existence of those principles and ideals of life and government which we hold dear. Our energies, individual and national, must for the moment all be turned to one purpose: to bring the war to a successful conclusion. The men who are fighting at the front are doing magnificent work, but it is for each of us in his own sphere to do his share in order that at the earliest possible moment the world may be free from the terrors of the war.

In time, peace will come. With that peace there will be renewed the international struggle for trade, and British enterprise must be ready to take full advantage of the great opportunities that will then occur. Individual effort will not be of any great use. Concerted action is essential if we are to retain the foremost place in the world of trade; and just as we are vigorous in the pursuit of the present war, so as a nation must we be vigorous in the pursuit of industrial and commercial supremacy.

How is this supremacy to be attained? It is primarily a question of education. We must have, in the first instance, an industrial army, capable, alert, and well trained. The production of this army must begin in the elementary schools. The leaving age of school children for urban districts at least must be raised to fourteen years, and age must be made the only leaving qualification. For this reform we must look to Parliament, as it is impossible for a local authority to make the change in view of the many local interests involved.

With the leaving age at fourteen years, local authorities and teachers, after making a careful selection of the boys and girls who should go forward to a secondary school at the age of twelve, could turn their attention to the children left in the elementary schools, who as a body may be expected to receive very little general education beyond that obtained in the elementary schools. For these children it would be possible to organise special two-year courses, which should prove extremely valuable in preparing them for the work they will undertake on leaving school.

A large proportion of the boys from our elementary schools enter some trade or some branch of industry, and for these the courses of study between the age of twelve and fourteen years of age, while remaining on broad general lines, should be somewhat industrial in character. There is at the present time a strong demand for industrial or vocational education in which practical methods and manual training are involved, but it must not be forgotten that the purpose of elementary education is not to prepare for a particular trade, but rather to develop all the child's faculties so that he may be prepared to enter any walk of life. The all-round general education of the child must be the first consideration, and in the suggested courses of study no attempt should be made to teach any specific trade. The courses would be entirely preparatory and general trades work, and would involve teaching the theory and principles which underlie British trades generally. "Learning by doing" would take the place of "book learning." An attempt would be made to put the whole boy to school, to train the entire faculties of the boy, intellectually, morally, and physically, and so fit him for life. The work which is now generally done in artisan evening schools would be covered by every boy in an urban elementary school, where the work would be done under vastly better conditions, as the teaching would be given to boys who are fresh and vigorous instead of to tired boys who have already done a day's work.

The workshops of the country require boys with self-effort, self-reliance, initiative, and thought, and it should be the object of these courses to provide just that training which would develop these habits. The general adoption of this development in elementary education would create in the near future a supply of intelligent boys, who would rapidly become in the workshops intelligent and skilled workers, ready and able to adapt themselves to the changing working conditions of the trade and of the times; and we should hear no more of the employers' complaint that the present product of the elemen-

¹ From the presidential address to the National Association of Education Officers, at the annual meeting in London on January 1st, 1915.

tary schools is not the type of youth they require in their shops.

In the proposed courses, roughly one-third of the school time of the boy during the age-period of twelve to fourteen should be devoted to the study of English subjects, one-third to mathematics and technical drawing, and the other third to actual experiments and practical work in the laboratory or workshop. The scheme of instruction would be arranged with the intention of securing an all-round development of the boy's faculties in a thoroughly practical manner, in order that by the time the boy is ready to commence work he may possess not only a general grip of the principles which underlie trades in general, but such intelligence, reasoning power, and adaptability as are calculated to secure for him the approval and good will of his employer.

We now come to the second age period and deal with the problem of the boys from fourteen to eighteen years of age. The boys have now left the school. They are in the workshops, and specific trade instruction must begin. Opportunities must be provided for the boy to lay the foundation of a livelihood which in the main will proceed through life. At the same time it must not be forgotten that the boy is something beyond a potential wage-earner or producer. He is a future citizen, and in the scheme of education for such youths time and opportunity must be provided not only to enable him to understand the occupation which he has entered and from which he is to obtain his livelihood, but also to enable him to understand his duties as a citizen. There should be provided opportunities for mental, physical, and moral training which shall fit him for manhood and for his place in the nation.

The modern workshops are highly organised and specialised with a view to enable employers to reduce the cost of production and to compete successfully for orders; consequently it is practically impossible to-day for an English boy to learn the whole of a trade in a workshop. It is in this connection that the technical schools of the country, working in close co-operation with the workshops, should fulfil their real function. When the boy enters the workshop his education is far from complete, even if he has had the general practical training outlined above. Continued education applicable to his chosen trade must be given, and the problem that confronts us is how best to ensure that the boy shall have this technical education in spite of the fact that the industrial conditions are vastly different from what they were.

Under present conditions the young worker is expected to get the necessary technical

education by attending the school for three or more evenings a week after he has done a full day's work in the workshop or in the factory. It is quite unnecessary to point out the drawbacks and disadvantages of this system. Excellent work has been done in the evening schools by youths of grit and character who have attended them, and a number of employers have done a good deal by means of suitable inducements to encourage their young workers to take full advantage of the opportunities for gaining increased knowledge and experience; but voluntary attendance at evening schools and voluntary schemes of co-operation between employers and educational authorities do not really touch the huge problem. The only effective way to train the rising generation of skilled workmen of the nation after leaving the elementary schools is to have half time in the workshop and half time at the technical school between the ages of fourteen and eighteen. In the words of our friend, Mr. J. H. Reynolds, the solution of the problem is, "Half time at the right time." Good health and physique are as necessary to the skilled workman as is the technical knowledge applicable to his trade, and the youth should have the opportunity of obtaining this technical knowledge without detriment to his health. In other words, he should be allowed to attend suitable courses of instruction for periods of suitable length within the normal working day. Half time in the workshop and half time at the technical school is certainly ideal, but possibly at present it is not practicable. At least, some modification of this arrangement must be adopted to enable young workers to attend day courses on three or four half-days a week, and thus get the necessary continued education during the daytime.

If England is to maintain her place in the world as an industrial and commercial nation, she will have to adopt this method of teaching trades to her boys. Other nations are doing a great deal in this direction. We must do more than they, because we have more at stake, and we must act promptly and boldly. Legislation is necessary; it must be made the duty of the employer to allow to the employee the time required for continuing his education according to the requirements of the trade or business which the boy enters. The need for a further limitation of juvenile labour is urgent, and it is equally necessary to place employers of labour under statutory obligation to enable young persons under eighteen years of age who are in their employment to attend courses of technical and general instruction at certain hours of the daytime when they are not too tired bodily and mentally to profit from the instruction.

An army requires capable leaders, and there must be in connection with the training of an industrial army opportunities for the selected few to become successful leaders of industry. For these no education can be considered too good. A thorough training in the secondary schools and the universities, combined with adequate experience in a workshop or a factory, is required. Science now plays so important a part in industry that more vigorous efforts than hitherto must be made to secure the highest and most suitable education and training for capable youths; and the future leaders of industry in England must be induced to equip themselves for competition on equal terms with the more highly trained young men of other nationalities.

The value of a thorough general education in the secondary school and university cannot be overstated, and full technical knowledge of the particular industry is equally necessary. The training of the young men must be practical as well as theoretical; actual experience in the workshop or factory is as important as the scientific training at the technical college or university, and service in a recognised office, workshop, or factory must be compulsory for a period either before or after the college course or during the continuance of the college course.

Some of the highest posts in industry will be filled by men who in the first instance enter the works as youths, and who, on account of their unusual capacity, force their way through the various grades to fill positions of responsibility. It is of the greatest importance that opportunity should be provided for youths of proved ability to secure the education and training required of those who fill the highest positions in industry if for financial reasons their parents are unable to provide that training. In this connection a duty falls upon the local education authority to make special provision for the benefit of such youths. Scholarships must be provided to enable young workers of proved ability to attend day courses at the technical college or university for three or four years in order that they may obtain a professional training that will prepare them to fill posts of greater responsibility in the future.

In the past, England has had too few specially trained leaders of industry. Men of practical capacity and trained thinkers, endowed with the power of applying their knowledge to the practical necessities of industrial processes, are essential in the industrial army, and the absence of a comprehensive scheme for the training of such men must prejudice the future of our country.

It is not sufficient to have a well-equipped industrial army; there must be markets for the products of industry. The goods produced must be sold, and we must have, therefore, a commercial army as well trained and equipped for the work of distribution as the industrial army is for the work of production.

The United Kingdom still ranks first among the commercial countries of the world, with its enormous annual imports and exports, its immense home trade, and its great shipping trade. In view of these facts it is strange that commercial education should have been so strangely neglected in England. Travellers, agents, and consuls representing the interests of British trade abroad are generally foreigners who have been thoroughly trained in the practice and theory of business while at home. The majority of our foreign correspondents and managers of firms with branches abroad are likewise foreigners. For years we have been giving the foreigners a practical experience and knowledge of our manufactures and methods of business which qualify them to meet us as strong competitors.

English firms are driven to the employment of foreigners because young men in England do not pay sufficient attention to commercial education and to the study of foreign languages. This state of affairs cannot be allowed to continue. We must produce an army of trained traders, and in the production of this army education must play a prominent part.

The first essential for one who is to enter a commercial career is a sound general education in which the study of English and at least one foreign modern language should be of first importance. Any intending business man should have a secondary-school education, and specialised commercial study should not be commenced until the age of fifteen at least. In many good secondary schools commercial sides are organised for the higher forms, and the studies of the pupils are given a certain amount of commercial bias. The commercial education so given is strikingly inadequate in comparison with the provision in other countries.

England in this matter has delayed far too long. It is now essential that there should be established in this country schools of commerce which in our English system might well form one side of our secondary schools, with a curriculum specially designed for the higher education of young people who are destined for a business career. The teaching staff must be really competent, and the school must be equipped for teaching the theory of business and as much of the practice of business as possible, the general aim of the school being

to train well-equipped employees of all grades, from the competent clerk to the competent employer.

For those engaged in business who are not able to attend full time at a day school of commerce, arrangements should be made by which they should be able to attend such schools on three or four half-days per week during the normal working hours. The young worker in a house of business is in the same difficulty as the young industrial worker: he cannot get an all-round training; and at present he must get his theoretical knowledge of commerce by attendance at a commercial evening school on three evenings a week. This system is unsatisfactory, but by a part-time attendance at a day school of commerce he might go through a modified course of instruction which, combined with his experience in a business house, should make him far better fitted for the post he is filling.

In the school for commerce the highest courses are arranged for the special purpose of fitting the student for the consular service. At the present time England is generally represented abroad by a foreigner, whose first interests naturally are not British. What we require is that every consul representing British interests should be an Englishman specially trained for the service, with a full knowledge of British trade, and ready and able to place British interests first.

Our travellers, managers, agents, and responsible clerks in connection with all branches of industry should be properly trained. They should complete a course of study applicable to their particular calling, including modern languages for commercial purposes, commercial arithmetic, book-keeping and accounts, commercial practice, geography and history of commerce, economics, and commercial law. At the same time, it cannot be too strongly urged that opportunities must be provided for education apart from the purely utilitarian form.

The period between fourteen and eighteen years of age is a vital period during which the youth should have the opportunity of fitting himself for livelihood and for life. He should have the opportunity of learning in the fullest sense his trade or business, and of developing those faculties of mind, body, and spirit that would enable him to fulfil his duties to his neighbours and to the nation. The school course should, therefore, offer beyond the purely technical or commercial subjects other subjects of a liberal character. The youth is not merely a wage-earning industrial or commercial; he is a human being, and his education and training should enable him to occupy his leisure time to good advantage.

LEISURE.¹

By ARTHUR ROWNTREE, B.A.

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I HAVE spoken on this subject so often to some of my hearers that I have the unpleasant consciousness that they are only listening, if indeed they listen at all, for well-worn arguments and threadbare illustrations. Let me assure them at once that I will not detain them for more than a few minutes, that I am leaving large patches to those who take part in the discussion later, and that my remarks appear to me replete with omissions.

The war broods upon the face of education conferences, and has already invaded the examination halls of the pedagogue with the question: What reforms in our primary and secondary schools have in your judgment been shown to be important by the lessons we are learning from the present war? Whilst some give as answer, "Drill, drill, more drill," and others point to more definite ethical teaching, my answer to the question to-day is, "Look to your leisure." And in favour of taking thought for the leisure-hours I quote Scott, the South Pole hero, who looked through the darkness of those last days to the wife and son at home and wrote: "Make the boy interested in natural history if you can; it is better than games; they encourage it at some schools."

Everyone coming to school ought to learn two things: to cultivate what he likes and to cultivate what he dislikes. And there are far too many cross-currents in school life for us to assert that either of these coincides with school hours or out-of-school hours. To cultivate what he dislikes: I am not going to say more about that to-day than that it is a commonplace of the boy to profess dislike of all compulsory work, and a commonplace of the moralist to urge him

To behave mannerly at table,
At least as far as he is able

To cultivate what he likes. In so far as this coincides with school lessons it is outside my province. "Look to your leisure." School used to mean leisure, and when the world was young people had school, had leisure, to learn how to make of life a harmony. The leisure hours of the modern boys' boarding school ought to be well filled. If it is a twentieth century characteristic to plead for leisure-hours unfilled, then let me ally myself with the nineteenth century in maintaining that not one per cent. of the boys needs unfilled leisure time. I knew a headmaster of that century

¹ A paper read to the Friends' Guild of Teachers on January 6th, 1915. Because my audience was familiar with the subject I did not think it necessary to state that I had chiefly in mind boys' boarding schools, that about twenty hours a week may be found for leisure-work, that it does not exclude games, that time and space must be organised in the interests of leisure-hours, and that most of a boy's leisure pursuits imply handwork in some form.—A. R.

who maintained that a group of boys standing idly round a fire tended to evil, and he used to instance St. Peter's denial of his Master when he was warming himself at the fire. Without endorsing every word—and I suspect that a twentieth-century radiator would restrain even an impetuous apostle—I will link myself to the headmaster in submitting that boys living in groups with many unfilled leisure hours become loafers and experience a devil arising in the heart, far worse than any death to them.

The practice of voluntary leisure-hour pursuits gains support from the work of Madame Montessori. Readers of Prof. Culverwell's illuminating criticism² will recognise my indebtedness to him in the next few sentences. Madame Montessori's success is based on the recognition of the Law of Spontaneity. But for spontaneity the baby would never develop. Five minutes of life puts the bee into a far more developed condition than three years in the case of the child. But one contains no latent potentiality, the other shows progress all the time. The little busy bee improves the shining hour day after day because it cannot help itself, cannot vary the improving, and therefore there is no progress; the baby shows spontaneity, *i.e.*, "action which is not part of a definite series operating always in a definite order." From this springs progress.

The boy who comes to his carpentry, archæology, natural history or whatever it may be, is often observed to develop rapidly his alertness and industry: and there is added a fresh sense of power, which means further development, when he feels that these spring from his own initiative.

Prof. Culverwell reminds us that sense-training and muscle-training involve brain-training, and he generalises that, on the whole, the people who are most skilful with their hands are likely, on the average, to attain to a higher standard of intelligence—a generalisation of great moment to hobby-horse riders. He points out that even the higher spontaneous tendencies must meet with a favourable environment *at the right time*, and illustrates it by the wolf-boys of the North-west Provinces of India, who were brought up by wolves during their early years, and when about seven years of age were put in an environment favourable for speech-development. It was too late: they never learned to talk. The boy must be caught as a collector at the collecting-impulse age, and the chances are all in favour of the collecting-habit uniting with higher interests, particularly where the objects are obtained with effort.

Last spring a keen ornithologist was able, in spite of the rigidity of school-hours, to secure a series of fifteen photographs, beginning with a young cuckoo in the egg cracking its shell, and finishing with the foster-mother hedge-sparrow feeding the usurper after her own broodlings had been turned out of the nest. The fifteen photographs occupied six hours in the taking; the ornithologist cycled 120 miles in six journeys to take them. His collecting habits have united with higher interests, and he has made a careful study of the habits of birds in protecting their nests.

I am not going to choose from the possible hobbies and place them in order of merit. Carpentry will always be popular; there will be lovers of beetles and lovers of tadpoles. There will be some able to say in later life that botany and church architecture have made most regions of the world full of interest; and all will join with the Lord Falkland who died ingeminating peace, when he exclaimed, "How I pity an uneducated man on a rainy day!"

Those who like to recognise that the education of the young human being follows in broad outlines the education of his kind may pin their faith to leisure pursuits on account of their development of handiness and a general mental readiness which includes quick observation and a power of adaptation. In a school where hobbies have been fostered for eighty years, the Old Boys provide an annual exhibition of about £10 for research work in connection with some branch of natural history or archæology; it is noteworthy, particularly at a time when some educationists rate this leisure work at a low value because it is unsystematised, that three out of the last four school exhibitors hold science scholarships at Cambridge.

My few minutes have expired. Let me close with a word to the teacher. We get new points of contact with the pupils by means of these hobbies; we have to be in the background because it is the pupil who has to grow—we are supposed to have exfoliated already—but in the background we can be full of sympathy, full of enthusiasm. So these hobbies add one more charm to the finest profession in the world, a profession that I would not exchange for any other, unless it be a peaceful bishopric in ten years' time. And let us remember that hobbies, beginning in small ways and developing until they unite with higher interests and involve considerable intelligence, encourage individuality in the boy, and last through life as a part of that true education which is an influence deepening and enriching human life everywhere.

² "The Montessori Principles and Practice." By E. P. Culverwell. (Bell.)

NATURE STUDY AND THE
TEACHER.¹

By ERNEST E. UNWIN, M.Sc.

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THE teacher of nature study must be an enthusiast. That is a trite saying; but in many ways it sums up the whole problem, and I put it first on my list. An enthusiast is essential because nature study has such a spiritual background, is of such value in its approach to the deeper problems of life. We can take nature as Thoreau took it, "as a mountain pathway to an ideal world"; and if I do not deal with this aspect of the subject, do not think that I ignore it or undervalue it. My whole training and my religious outlook are in deep sympathy with all that is meant by the phrases, "the true inwardness" and "the aesthetics" of nature study; but in the schools with which I am associated the leisure-time work, the pet keeping, the natural history club with its meetings and excursions, the art work, the general religious atmosphere, all help to develop in our boys and girls this mysterious something which we get from a loving contact with nature.

Of course, in many schools, especially in the towns, much may be done by the enthusiast to bring the pupils under the influence of this spirit of nature by means of excursions and school journeys, and in some measure to make up for our bad social management of things in allowing this hideous denial of sun, air, and nature which we call a city.

All honour to the work that Mr. G. G. Lewis and others are doing in connection with school journeys and country holidays for town children.

I remember reading in your magazine² a report of a debate as to whether a nature-study teacher ought to have a scientific training, and I agree with Miss Hibbert-Ware and her amendment:—"That although a definite previous training is desirable, yet teachers who lack it may still do excellent work by means of personality, a love of the subject, and that training should come through the careful preparation of lessons." I should therefore make my second qualification this attitude of mind which is meant by this amendment, and call it the spirit of inquiry. This is essential; the teacher must have this feeling for the unknown, this power of research, otherwise he cannot guide aright "this monkeyish curiosity" which, Miss von Wyss rightly tells us, "is the foundation of wisdom, and in it

science has its roots." Without this attitude of mind the teacher will become impatient with and unsympathetic towards the questions and difficulties of his class.

A scientific training, along right lines, should give the teacher this all-important quality of mind, but I am certain that it does not always do so; and I am equally certain that there are scores of teachers who, having had no definite scientific training, yet having the inquiring mind and the teachable spirit, get from their classes work of the highest order. They research in the preparation of their lessons, they carry on their inquiries through the lessons together with their pupils, they are never afraid to say, "I don't know; let's try to find out."

If possible, it is well to have some piece of inquiry on hand independent of the lessons; there are thousands of things around us presenting problems, many of which can be solved by observation and experiment. In this way a freshness of mind is obtained, and we become more capable of encouraging that right attitude of mind in our pupils.

Prof. Thomson has defined this qualification in his inimitable way by suggesting that there are four fundamental questions which must always be in our minds. What does he say?

"It may be useful to *teachers* to point out that the naturalist asks four chief questions, the answers to which, all very imperfect, are unified into a science of life-lore or biology.

"The first question is: 'What is this?'—an inquiry into form and structure.

"The second question is: 'How does this act?'—an inquiry into habits and functions.

"The third question is: 'Whence is this?'—an inquiry into development and history.

"The fourth question is: 'How does this come to be as it is?'—an inquiry into causes."³

The teacher therefore, with enthusiasm, with the true love of nature combined with this spirit of inquiry, will soon have his class working along definite lines, which will be training them to make their own observations, to marshal facts, and to draw conclusions from them. This cannot be had without hard work. It is much easier to tell the class the various interesting points about a plant, an animal, or piece of rock than to get them to find these things out for themselves; the easy method slurs over the awkward and difficult questions which invariably come up when the harder method is attempted; but there is not the slightest doubt about the relative value of

¹ From a paper read before the School Nature Study Union, January 6th, 1915.

² *School Nature Study*.

³ Suggestions to Teachers for Seasonal Nature Study and treated more fully in "Darwinism and Human Life."

these two methods; one is artificial education, the other natural.

We must see, first of all, that our work has a *practical* basis; only thus can it become scientific. That doesn't mean that every class should necessarily contain some practical work; if it does or not depends on circumstances and arrangements; but the nature study in the class-room should have for its basis some definite observational or experimental work, done either in school or on the way to school or out in the country.

Again, we must plan the lessons to suit ourselves. We all believe this, and everyone says it. Naturally those things in which we ourselves are interested are right for us, and no one can draw up a complete syllabus for another. Yet let us not be guilty of narrowness of outlook, nor of being too content with our own little schemes of work; we must be catholic in spirit, willing to share with others, willing to learn from others, always on the look-out for new ideas which we can turn to our own advantage, otherwise we are denying in ourselves the very spirit of curiosity and inquiry which we are endeavouring to cultivate in our pupils.

Often another more experienced teacher can put us in touch with better methods. I remember some years ago one of my classes was engaged in seedling work. We grew the seedlings; we examined and sketched them. Our practical work began with the bean, and then continued through the various stages. Another teacher seeing the work said: "Why not start the practical work with the old seedling and work back to the seed?" This at once showed me a better method; the work became more scientific. The difficult problems of the bean seed, as to the nature and use of its parts, which faced us at the outset, all fell into their right places and became intelligible when approached with the knowledge got from the study of the descending series of seedlings. We thereupon changed our plan. We grew the seedlings, watched and recorded their progress, and when by subsequent plantings seedlings of various age were available, we started our lessons with the oldest, and worked back not only to the seed, but to the pod and ear.

Then, again, the teacher cannot have a free hand; he is bound more or less by his environment, but nature study is just one of those subjects which, granted that enthusiasm and the spirit of inquiry are present, can triumph over adverse conditions. How can nature study be taught in London, in Leeds, in any large town? The more I see of nature-study teaching, the more I am coming to the opinion that it may be even harder to teach

real nature study—that is, to keep the scientific spirit as its basis—in the country than in the town. Of course, it should not be so, but with one or two brilliant exceptions I have found the most successful teaching in town schools.

In the country the wealth of life and its variety may sometimes overwhelm us, and we neglect to use our privileges to the best advantage; we become too vague, too general, forgetting that the young mind is always more interested in the "particular" than in the "general." In the town perhaps the "general" has to be ignored almost entirely, and there is the danger of the connection between the work in the class-room and the wider problems in the world of nature being forgotten.

In the country, with the presence of this abundance of animal and plant life in our environment, we must see that our teaching does not err on the side of sloppiness, of diffuseness; that our lessons do not degenerate into pleasant and interesting chats about things as the seasons roll through their course, without any definite aim or any definite scientific and brain-stretching discipline.

In the town, the very absence of the country as the environment, may serve to crystallise the nature work, may cause it to develop a definite scientific method and aim, very much to its good, so long as we do not allow this crystallisation to obscure the other wider problems.

In the country we must not leave out study. In the town we must not forget nature.

If only we could give our nature-study teaching the scientific basis that it ought to have, if we could show that it provided a mental discipline of the utmost value, that the problems it sets us are problems which will help us to understand environment, evolution, life, God, we could demand and obtain its right recognition from the educational authorities. I look forward to the day when the curriculum will be revolutionised, when the classical tradition, with its dead hand of authority, will be superseded by the scientific tradition; and in that day nature study ought to come into its right place, for the words of Prof. Miall are very true when he says: "You will have your reward if your pupils, whatever may be their occupations in after-life, turn out handy, inquisitive, thoughtful, accurate, and sympathetic towards all the nobler forms of human effort. To train such men and women, and not to train botanists or zoologists, is the real aim of the study of nature."

The planning of our work along these lines

will make still more necessary the organisation of nature rambles, school journeys, and such like things, so that all those inward values of nature study may not be lost, and what is gained on one side lost on the other. But there comes to every teacher during school hours many chances of instilling the appreciation of beauty and those other æsthetic values; and the question, "How does this live?" will enable the teacher to lead his class to a deeper sense of the wonder, the beauty, the delicacy, and the charm of the web of life.

What method do I adopt? Certainly no single method to the exclusion of all others; but the method which I most frequently use is, as will have been gathered, the "question and answer" method: the setting of problems which can only be solved by some definite work on the part of the child. Questions are asked orally, written on the blackboard or hectographed, and answered orally or in writing. On the whole, I find that it is best with younger classes to let them do a large amount of oral answering, getting from them drawings and a written summary as their record of the work done; but with boys and girls of fourteen or more, most of the answers are written down, and they also summarise the discussions which we hold at the end of any definite piece of work.

No scheme is perfect, and the success depends upon the way it is used. It must not be used artificially; the personality of the teacher must always be felt.

Sometimes we drop the questions to pursue an interesting and *profitable* side line; in the early stages, when a class is new to the method, we will tackle a few questions and problems together; sometimes there is nothing for it but to give a certain piece of information, and a good deal of guidance may be needed in the drawing of right conclusions.

Oral questions and answers are somewhat easier to manage when a botanical subject is under consideration. The plants do not run about; there is generally but little variation in the specimens; observational work is, on the whole, easier, and a class can be kept fairly well together; but even in the most straightforward piece of work it is difficult to be sure that all the members of a class are working equally. There is the danger that the quick and eager pupils will supply most of the information. I therefore favour, where possible, the individual answering on paper. This is still more necessary when living animals are being considered, for it is impossible to make a dozen toads, a dozen earthworms, or a dozen beetle larvæ do the same things at the same moment.

Again, this method of written questions and answers sets the teacher more or less free to give individual encouragement and help; it enables him to see how the different members of the class are getting on.

"The best laid schemes of mice and men——" We know the proverb, and we must be prepared for the unexpected. All of this is demanding a great deal from the teacher; he must know his subject well—at least that part of it which he is interested in; he must know it by studying it in the same way as he is going to expect his class to study it; he must not take a vow never to tell the children anything that they can find out for themselves, for he won't keep it; he must constantly have his finger on the pulse of his class, ready with his assistance when required, ready to see signs of fatigue.

I am quite sure one good way of encouragement is to show them they are using the methods of the great world naturalists; tell them about Swammerdam and Réaumur; tell them about Darwin's thirty years' research on earthworms when they are studying this creature; tell them the story of Pasteur and the silkworms, or about Pasteur and fermentation. It may also be a stimulus to let the class know something of any little piece of research we may happen to be engaged in at the moment.

Pet-keeping should be encouraged as much as possible, for it can be a very valuable feature of nature-study work. Some favoured schools, with plenty of available land, can keep almost a farmyard of animals, even a miniature zoo; others can only manage an odd pet or two. Do not be afraid to interpret the word "pet" in a wide sense, and do not imagine that all pets need keeping for very long. Aquaria and most aquatic animals are easy to keep, but besides these I have kept in an ordinary class-room, or near by, frogs, toads, newts, salamanders, earthworms, snails, woodlice, all kinds of insects (including stick-insects, house crickets, cockroaches, ants), spiders, crayfish, snakes, lizards, young birds, hedgehogs, moles, shrews, mice, rats, a jerboa, bats, guinea-pigs, rabbits, not to speak of the more domestic dog and cat. Here again the "question" method is by far the most satisfactory; the drawing of living animals is too difficult for most children, but they are ready enough to watch them and to answer questions about them, and it is not difficult to frame questions which will bring out the chief points of interest in their general structure and habits of life.

Sometimes the pet stays for a day, sometimes for a week; sometimes, after serving its purpose in the class-room, it is handed over

into the care of two members of the class, who report progress from time to time. The keeping of pets with all the care and constant attention required is a most valuable training in kindness and sympathy.

All our work will benefit by being cast into the scientific mould. When doing museum or out-of-doors work I have always found it best to go carefully over the ground beforehand, and to set a list of questions to be answered or some definite problems to be solved. Then at halting-places in our ramble or at the next class the discussions have some point.

I can imagine many thinking that there would be a loss of interest in the museum visit or nature ramble, but that has never been my experience; indeed, it has been just the opposite, for on those occasions when I have not used this method the interest has been less and the result of undirected observations disappointing.

There is one other side branch of this immense subject upon which I want to say a few words. At your meeting held here a year ago, Miss von Wyss, in describing the effect upon the adolescent child of real nature study, said:—"Nature study lays the most normal and sound foundations for all the problems of life that confront the adolescent boy and girl. By its aid the biological facts of sex and hygiene are approached in a direct and objective way. It has occurred to some of us that, if sex knowledge in broad outline formed an integral part of more advanced nature study, it would be acquired in its right setting, and the dangers of provoking morbid pondering and introspection would be avoided."

With this I am in perfect agreement; in fact, for many years I have felt that the nature-study teacher ought to be the right person to deal with these matters, and the more so if nature study has been travelling along lines I have indicated, for our questions and observations will have constantly brought up the questions of sex and the reproduction of life, and it is easy to extend these inquiries of plants and animals along lines which will gradually provide the right atmosphere for giving out the faith that is in us with respect to these matters. We shall find that this approach will have created the right attitude and outlook, and the minds will be ready for those thoughts of purity and self-control, of wide sympathy for all womankind, which are so badly needed.

Finally, now that I have come to the end of my paper, I am terribly conscious that I have done little to help those whom I was asked to help, the teachers of nature study in

London and other town schools, who are often discouraged in their work. To these, then, let me address the last thing I have to say. If we believe, as I certainly do, that nature study should turn out men and women who are "handy, inquisitive, thoughtful, accurate, and sympathetic towards all the nobler forms of human effort," then we must plan our work along lines which will develop these qualities. I believe that these lines will be found in a definite training in scientific method, taking into account and turning to its use native curiosity and love of finding out, planning the work so as to represent, even faintly, the methods of research, training the young minds to demand facts upon which to base conclusions. All these things should come out of the method recommended in my paper, and can be accomplished in a London school as well as in a country school.

PERSONAL PARAGRAPHS.

THE Rev. J. H. Dudley Matthews, rector of Purley, near Reading, was recrossing the Thames after assisting at the service at Maple Durham Church on December 20th last. Mr. Matthews was found by the lock-keeper hanging on to the dinghy, which was on the edge of the weir. He grasped the boat-hook, but the water swung him round, and he and the dinghy were dashed into the surging pool. Mr. Matthews, who was at University College, Oxford, was for sixteen years a master at Wellington, and in 1884 became headmaster of Leeds Grammar School.

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SECOND-LIEUTENANT J. T. R. PASTFIELD, who was educated at Exeter and Keble College, Oxford, fell on December 22nd. He took a prominent part in the work of the Signalling Detachment of the O.T.C., and when the war broke out he volunteered and was gazetted to the 5th Middlesex. In November he went to France, and was attached to the 1st Northamptonshires. He was twenty-three years of age, and a master at Bloxham School.

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SECOND-LIEUTENANT H. D. HILTON, who was killed in December, was, until the war broke out, a master at University College School, and an officer in the school contingent of the O.T.C., from which he obtained his commission in the Middlesex Regiment.

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MR. A. A. SOMERVILLE, of Eton, advocated military training in schools at the annual meeting of the Assistant-masters' Association. He has also been one of the active members of a training corps of the residents

at Eton, which was recently referred to as "Somerville's Light Infantry."

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MR. C. H. BICKNELL, Sur-Master of St. Paul's School, has been appointed headmaster of the Mercers' School in succession to Dr. Douglas Lee Scott. Mr. Bicknell was educated at Christ's Hospital and Jesus College, Cambridge. He was appointed mathematical master at St. Paul's School in 1888, and in 1890 formed the school cadet corps. He is a Liveryman of the Mercers' Company.

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MR. E. SHARWOOD SMITH, at the annual meeting of the Teachers' Guild, subjected the Board of Education circular on leaving examinations to a severe criticism. The first part of his paper is printed elsewhere in the present issue. Mr. Smith is headmaster of Newbury Grammar School; he was educated at King Edward's School, Birmingham, and has been a master of Shrewsbury School, Cheam's School, Surrey, and Hymer's School, Hull; for three years he was headmaster of Whitchurch Grammar School, and since 1903 has been headmaster at Newbury.

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THE new chairman of the Headmasters' Association is the Rev. E. F. M. MacCarthy. He has devoted many years of active service to education in Birmingham; for twelve years he was second master of King Edward's School, for four years he was headmaster of King Edward's Middle School, and since 1883 he has been headmaster of King Edward's School, Five Ways.

* * *

THE third annual conference of the Educational Associations was opened at the University of London by Bishop Welldon, Dean of Manchester, who took for the subject of his inaugural address "The Principles of Educational Science," in which he subjected German "kultur" to a searching analysis. The Bishop was for fifteen years a schoolmaster, from 1883 to 1885 at Dulwich and from 1885 to 1898 headmaster of Harrow.

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THE new chairman of the Assistant-masters' Association is Mr. G. D. Dunkerley. Mr. Dunkerley was educated at Manchester, whence he went to the Royal College of Science. Since 1905 he has been senior science master at Watford Grammar School; during the illness of the late headmaster, Mr. Dunkerley was acting headmaster. Mr. Dunkerley has done a great deal of quiet work for the Assistant-masters' Association, mainly in connection with internal organisation and finance.

SIR OWEN ROBERTS died at Henley Park, Guildford, on January 6th. The honour of knighthood was conferred on him in 1886 in recognition of the public service he had rendered in the cause of technical education, of which he was one of the pioneers. His work was by no means confined to the limits of the City of London, where he was for some time a governor of the Sir John Cass's Foundation and of the City of London College; it was in a great part due to him, for instance, that the dye industries of Yorkshire and the west of England—through the medium of the Yorkshire College at Leeds and the University College, Bristol—received so much encouragement at the outset. For eleven years he served on the Technical Education Board of the London County Council, and was chairman of the Polytechnics Committee from 1891 until 1902.

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IN the New Year's honours are two representatives of Colonial education, Mr. Frederick Chapple, headmaster of Prince Alfred's College, Adelaide, and Mr. George Hogben, Inspector-General of Schools, New Zealand.

* * *

MR. H. J. ROBY, whose death is announced at the age of eighty-four, is an example of the all-round ability which marks the best kind of English public men. He is also an example of the practical value of the celibate rule for fellowships, which kept, it is true, a number of old fossils in the university, but ensured a quick circulation of those who were not of the fossil class. He gave some of the best years of his life to college work, then married and went out into the world. He was secretary of Palmerston's Commission on the endowed schools, partner in a business firm, professor of jurisprudence, member of Parliament, grammarian, author, and, in his later years, gardener. His "Historical Latin Grammar," although not really historical, was a most original work, combining the thoroughness of the German with the logic and good sense of the Englishman; and his works on Roman law have also a permanent value. For many years his varied accomplishments were thrown into the shade by a famous answer before a Select Committee. The Schools Commission left the question of religious instruction to the governors. Mr. Roby was pressed to admit that they could make the religious instruction what they would; if they became Mohammedans they could teach the Koran. He replied, "Yes, if they became Mohammedans they probably would."

ONLOOKER.

LEAVING CERTIFICATES AND EXAMINATIONS (CIRCULAR 849).

THE proposals of the Board of Education have been public property since last July, and were commented on in THE SCHOOL WORLD for September. We are now able to give the reasoned criticisms put forth by the Association of Headmistresses, the resolutions of the Headmasters' Association, and to add some references to the discussion at the Teachers' Guild on Circular 849.

It is well that the proposals, issued in the first place for consideration, should be discussed, and that pressure should be brought to bear on the Board in respect of them. At the meeting of the Headmasters' Association, Mr. W. N. Bruce mentioned that the Board was already preparing the form of the certificate to be awarded; so arrangements are more forward than one would suppose from the appeals for suggestions made in the circular. One can scarcely say that the Board's proposals have been well received. Many teachers would welcome a proper leaving certificate that would abolish professional and other examinations. Few want a system introduced that offers little and foreshadows much interference.

The headmistresses have called in question in particular :—

Pars. i.-v.

(1) *The grouping of the subjects of the proposed examination.* (A resolution at the I.A.H.M. meeting that the fourth group of subjects should not be set outside the examination proper found much support.)

Clearly the syllabus for girls must differ from that arranged for boys.

MEMORANDUM ON PROPOSALS BY THE ASSOCIATION OF HEADMISTRESSES.

Annual Examination of Grant-earning Schools.

Par. i.—The Executive Committee of the Association of Headmistresses welcomes the proposal of the Board of Education to co-ordinate the school examinations conducted by various university examining bodies.

The committee notes with much satisfaction that the Board sanctions variety in the examining bodies for different schools. It would deprecate any scheme for the conduct of examinations by one central authority.

Provision of Two Examinations.

Par. ii.—(a) The committee welcomes the proposal for examinations of two grades.

(b) The nomenclature and status of classes and forms differ very widely according to the conditions and circumstances of individual schools.

The committee would much prefer, therefore, that all reference to "forms" be omitted in any regulations to be issued hereafter, as such reference may be misleading.

The First Examination.

Par. iii.—The committee approves of the main provisions, but with regard to the statement that "the candidate will be expected to show a reasonable amount of attainment in each of these (three) groups," it would express a strong opinion :—

(a) That in group iii., the candidates should be allowed to offer *either* arithmetic and science *or* mathematics, including arithmetic.

(b) That proficiency in the fourth group of subjects described in (vi) should count towards a certificate as an alternative to either group ii. or group iii.

Par. v.—(a) In reference to the concluding sentence, the committee would deprecate any raising of the examinations standard for admission to training colleges for elementary teachers.

(b) The committee recommends that the fourth group (described in par. vi.) be added to the three groups in (iii.); and that a candidate should be expected to show a reasonable amount of attainment in group i. and in *two* of the remaining three groups.

N.B.—Many headmistresses are in favour of requiring a "school-record" of instruction and attainment to be produced in the group not offered in the examination, and the proposal is supported by at least one local association of headmistresses, and by influential members of the committee, though not by the majority.

Pars. vi.-vii.

(2) *They also object to the compulsory presentation of whole forms.* (At the meeting of the Teachers' Guild strong representations were made against compulsion and the idea that all candidates, however valuable as individuals, must pass the same theoretical examination.)

A leaving certificate must be obtainable by a candidate of character just as much as by a candidate with a good memory. On this point see Mr. Sharwood Smith's remarks quoted below.

Par. vi. The committee strongly recommends that physical exercises be added to the subjects enumerated in the fourth group.

Concluding Sentence :—

The committee takes strong objection to the regulation that "All schools which claim to be recognised as efficient secondary schools should be able to present a whole form for the first examination."

(a) The committee desires that no examination be made compulsory. It is fully sensible of the gain to education due to the substitution of inspection for examination as a test of general efficiency.

(b) It deprecates any assumption that the efficiency of a school should be judged by the power of presenting a *whole* form for such an examination. It is of opinion that local conditions and the economic circumstances of the pupils strongly affect the standard of work reached by the upper forms, and some schools, most thoroughly efficient, and filling a necessary place in the education of a district, may yet find it difficult to present a whole form even for the first examination.

(c) The classification of the older girls in a school should not depend only on their ability to pass examinations. There is in almost every school a certain number of girls of "reasonable industry and ordinary intelligence" whom it is useless to expect to reach the normal examination standard, but who are yet valuable members of the higher forms of the school.

The Second Examination.

Par. vii.—*Concluding Sentence* :—

The committee desires, owing to the varying conditions in schools alluded to above, to see some qualifying expression (e.g., "as a rule") prefixed to this regulation of an interval of two years between the two examinations.

Pars. viii.—xvii.

(3) *Attention is called to the proposed age limit of 19, to the co-ordinating authority, to the insufficient representation of teachers on the advisory committee, and to the prohibition of other examinations.* (Compare the Headmasters' resolutions below.)

Examination Open to all Candidates under Nineteen.

Par. viii.—The committee deprecates the institution of an age-limit for external candidates only. It would recommend the raising of the upper age-limit to twenty, for all candidates.

Teachers and the Examinations.

Par. ix.—(c) The committee would prefer to see this proposal made permissive only, the word "allowing" being substituted for "requiring" (in the first line).

Co-ordinating Authority.

Par. x.—The committee resolved that criticism be reserved on par x., which deals with the functions of the co-ordinating authority.

Such an authority is obviously indispensable to the scheme, but the committee is uncertain how this clause would work out in practice and would therefore refrain from fuller criticism for the present.

Par. xi.—The committee is of opinion that :—(1) It is important that teachers should be adequately represented on the Advisory Committee; "a" representative from the Teachers' Registration Council is altogether insufficient for the purpose; (2) the status of the Advisory Committee should be carefully safeguarded, in order that its advice may be effective.

Certificates.

Par. xii.—The committee desires to express general agreement with the scheme for certificates outlined in par xii., subject to the following observations :—

(a) Certificates should be issued by the university responsible for the examination.

(b) Some apprehension is felt lest the Board of Education should exercise a too rigid control (by requiring examinations to be subject to special approval).

Par. xv.—The committee wishes to record its satisfaction that the connection of the certificate with the school has been fully recognised and provided for. It

believes that this connection, if maintained without undue rigidity, will afford the best security against the disadvantages of the present examination system.

Other Examinations in Grant-earning Schools.

Par. xvii.—While recognising the desirability of diminishing the number of examinations and wishing to co-operate heartily in any effort directed to this end, the committee, as has been already said (par. xii.) does not wish to see a rigid control by the Board of Education over the schools, or individual scholars, in the choice of examinations for special purposes.

In conclusion :—

(4) *The opinion is emphasised that the success of the examination depends on conditions that the Board expressly leaves out of court.* (Teachers feel that the proposals add an examination instead of freeing the country from an incubus.)

In conclusion, the Executive Committee wishes to emphasise its opinion that the success of the new scheme depends in the main on the degree to which the new examinations can be utilised for : (1) entrance to universities; (2) entrance to professions; (3) award of scholarships, etc.

It recognises that the Board of Education expressly disclaims (in par. v.) the intention of laying down conditions of this kind, but it is obvious that if pressure is exerted on grant-earning schools to use the two examinations only, such schools will be at a very serious disadvantage, unless the Board also exerts pressure to secure due recognition of the certificates gained.

—Signed, on behalf of the Executive Committee,

M. E. ROBERTSON,

President.

FLORENCE M. A. GADESSEN,

Chairman, Examinations Sub-Committee.

At the Headmasters' meeting four resolutions were proposed, and a fifth added by the members present. The resolutions brought up for discussion were quite general; apart from them there was much adverse criticism of the Board's proposals. So much so that one speaker directed attention to the fact that all, or nearly all, of the sections had been attacked, and that the proposals had better be withdrawn *in toto*.

That this association, (1) while reserving judgment on details, desires to welcome the general policy as to examinations set forth in Circular 849, and trusts that the main proposals contained therein will be carried into effect as soon as possible.

(2) Acknowledges with satisfaction the stress laid upon the co-operation of teachers, but is of opinion that teachers actually engaged in secondary schools should be directly represented on all examining bodies; and regards the proposed representation of teachers on the Advisory Committee of the Co-ordinating Authority as totally inadequate.

(3) Reaffirms its conviction that until universities and professional bodies accept the reorganised examinations in lieu of their own entrance examinations, no material relief will be afforded to the schools.

(4) Is of opinion that the proposals of the Board cannot effectively be carried out unless adequate provision is made for the additional financial burden that will be placed upon the schools.

(5) Is of opinion that examinations of a "Junior Local" stage should not be entirely abolished, but that the question whether such examinations shall be taken by the pupils from any given school may fittingly be left to the discretion of the headmaster of that school.

The Teachers' Guild expressed dissatisfaction with the proposal. At this meeting, as at the Guildhall, Mr. W. N. Bruce, as the leader of a forlorn hope, spoke in favour of the Board's circular.

Two striking passages from the remarks of members may be quoted, the first from Mr. E. Sharwood Smith's paper, a part of which will be found in earlier pages, the second from that of Mr. H. C. Norman:—

(1) Two or three days ago he (Mr. Smith) had met an old pupil who had just left a lonely and responsible position in a remote region in order to join the new army, in which he had no difficulty in obtaining a commission. "I never did, and I never can, pass an examination in my life," he said, "but I can lead men."

(2) Discussing the proposals in detail, Mr. Norman protested against the suggested abolition of all "junior" examinations. In his opinion, these examinations had a distinct value, though he would never allow any special preparation to be made for them. They ought to be taken "unseen," as it were, as part of the year's work.

The Assistant-masters' Association passed the following resolution at its annual meeting:—

That this association instructs the executive committee to approach the Board of Education, with a view of ensuring that secondary-school teachers shall be duly represented on the Advisory Committee to be formed by the Board for the purpose of standardising school leaving examinations.

The Assistant-mistresses' Association at its meeting adopted the following resolutions:—

(i) That this meeting heartily approves of the simplification of examinations proposed by the Board of Education in secondary schools. It also approves of the annual examination of a grant-earning school by one of the university examining bodies recognised by the Board of Education, and of the first examination being arranged for pupils whose average age is sixteen to sixteen years eight months, but it considers that the second examination proposed at the age of eighteen should not in all cases be compulsory.

(ii) That this meeting approves of the principle of teachers being in touch with the examining bodies by representation on the Board of Examiners, by consultation with examiners as to the progress of pupils, and in any other way that seems advisable, provided that teachers do not examine their own pupils.

SOME SUBJECTS DISCUSSED AT THE EDUCATIONAL CONFERENCES.

THE OTHER GERMANY.

IN his presidential address to the Modern Language Association, Mr. W. W. Vaughan, master of Wellington College, pointed out what is likely to be a real danger in the future. He expressed a fear that we pay too little attention to the best literatures of France and Germany. When the present conflict is over we shall need to bear witness that, besides the Germany with which the newspapers have made us sadly familiar, there is another Germany; that besides Treitschke, who, after all, was a man of genius, there are other German historians; that Nietzsche is not the only German philosopher; that there are other German writers besides Bernhardi. We must remember that it was Lessing that opened our eyes to art; that Wagner opened our ears to music; and that into our hearts we have taken the plays of Goethe and the prose of Heine. And if this witness is needed on behalf of our foes, is it not needed, too, on behalf of our friends? It would, indeed, be sad if the fortitude of France did not make us dissatisfied with what we know and what we teach of French literature. Such spirit and such patriotism had its rise in a deeper soil than that suggested by the French novel, even by those we have seized for the schoolroom. To understand and make others understand it we must penetrate to the tenderness of the old French poets, the patriotic rhetoric of Racine and Corneille, the humour of Molière, even the overstrained pathos of Victor Hugo. The more convinced we are of the righteousness of our cause, the more resolute we are to carry on this hateful contest until we have saved the German people from the German rulers, the more we who must stay at home must fit ourselves to interpret the richness of the spiritual and intellectual inheritance which falls to us from friend and foe alike.

GEOGRAPHY AND THE DEVELOPMENT OF THE HUMAN RACE.

Mr. Hilaire Belloc, whose comments on the progress of the war have attracted widespread attention, this year delivered the presidential address to the Geographical Association. His critical examination of many explanations current among teachers of geography should give rise to much self-examination among schoolmasters. Dealing with the effect of geographical conditions upon the development of the human race, he referred to the current impression that the commercial greatness of Great Britain is due to the fact that she lies in the middle of the land

hemisphere. Unfortunately for that theory, other places lie in the middle of the land hemisphere, and England is not the nodal point of the communications of the world, and English ports are not very suitable to modern commerce. The reason why England is the centre of the world's commerce is the energy, capacity, foresight, and thrift of the merchants of the City of London. If those merchants lived in Cherbourg, and had shown the same energy and will, Cherbourg would have become what London is. Of course, if England had been situated in Greenland or in the heart of the tropics, she could not have become the centre of the world's commerce, for man cannot be at the utmost of his capacity in great cold or great heat. Material conditions obviously limit the human spirit; but they are not the cause lying behind human spirit. Later Mr. Belloc said Bizerta could have been made a great Carthaginian port with scarcely any trouble, yet Carthage was content with a port worse than Liverpool, which was saying a good deal. The deliberate choice of some individual or Government is another element in history which upsets many preconceived ideas of geographers. Constantinople, with all its magnificent strategic and commercial position, was an insignificant country town for centuries until Constantine decided to make it a second capital of the Roman Empire. Fifty years hence Delhi will be vastly more wealthy and important than now, by the decision of the Government of India. Why are the Law Courts in the Strand? Why is the London County Council Hall being built on the south of the river? Mr. Belloc defied any man to find a cause and effect explanation for these things.

THE REGISTRATION OF TEACHERS.

The registration of teachers was the first subject discussed at the annual meeting of the Association of Headmasters, and the following resolution was carried unanimously:—"That this association regards it as of the highest importance that all secondary-school teachers who have not already applied for registration should do so without delay." Mr. F. Roscoe, secretary to the Teachers' Registration Council, in some remarks on the subject, said after exhaustive inquiry it has been decided to recommend that up to the end of 1920 any teacher shall be admitted to the register on producing evidence of adequate experience. The only exception is that teachers thus admitted from public elementary schools must hold the Government certificate. An opportunity is presented for promoting a great reform in education by encouraging the fusion of many existing examining bodies which now compete for candidates and live on the fees paid for diplomas. Many of those examinations are good, but they are distractingly numerous. What is required is a system of joint examination boards for teachers, working under the sanction of the council. A principle which it is of the utmost importance to maintain is that examinations which profess to test teachers shall be under the control of teachers. It is the distinctive mark of a profession that incoming practitioners are licensed by the professional body and not by outsiders. It is not asserted that the Registration Council shall conduct examinations; that is not

desirable, but it is essential that the council shall have the right to say which examinations are acceptable, and it is hoped in time to have them conducted by universities or similar responsible bodies. There are at least 120,000 teachers eligible for enrolment, but during the year the register has been open 5,000 have applied for admission. Out of every twenty-four teachers only one has supported the movement. It is, however, impossible to believe that teachers as a body will be content to exhibit themselves for a second time as unable to discover the measure of good-fellowship and of self-sacrifice involved in sinking a few prejudices. The enterprise can only be carried to a successful end if every individual teacher registers at once.

THE TEACHER AS CIVIL SERVANT.

During the course of his presidential address to the Teachers' Guild, Canon Masterman said the prospect of the teaching profession organised as a branch of the Civil Service has no charm for him, for the essential characteristic of the Civil Service is the subordination of individuality, while the work of teaching involves the full expression of individuality. We teach by what we are far more than by what we know. It is this that gives to the work of the teacher its honour and responsibility. Any union of teachers, to be effective, must be a voluntary union of men and women who desire to give to each other the help and sympathy that ought to make every teacher feel that he or she has become part of a great confraternity. If there is one lesson that is written in letters of fire across the history of the year it is the supreme influence of education in moulding the destiny of nations. Beneath all immediate causes the present war is the outcome of divergent ideals of education. We see now that it is possible so to train a nation that it may subordinate all personal ends to the furtherance of national aggrandisement; and while such a nation becomes a peril to the world, it becomes even more a peril to itself. If, on the other hand, we accept as an axiom the ultimate value of the individual, and recognise that docility and self-subordination are not the best assets of national life, our teaching will tend to develop self-reliance and power of initiative. We shall value freedom above efficiency and ultimate gain above immediate success. A healthy belief in voluntary association is one of the most valuable of our national characteristics, and we are at the beginning of a reaction against the tendency to displace the spontaneous initiative of voluntary organisation by the cast-iron regulation of State-made uniformity. Our main work is not with questions of stipend and regulation, but with ideals and methods. The work of the teacher cannot be other than a religious work, and over our sectarian controversies there is already dawning the light of a nobler conception of the meaning of religion in national life.

THE WORK OF THE ASSISTANT-MASTERS' ASSOCIATION.

Mr. J. V. Saunders, of Hymers College, Hull, the retiring chairman of the association, in his address said no satisfactory scheme for the organisation of secondary education can be drawn up, no scheme

could work, until the nation has at its disposal the united opinion of a large body of efficient and experienced teachers. Towards that end the Assistant-masters' Association has so far achieved something like fixity of tenure. Registration is progressing. The association might have been able to congratulate itself on an accepted pension scheme but for the war; and though the war has, for the time being, stopped the salaries campaign, substantial progress has already been made, and material has been collected which will be useful when circumstances make it possible to continue the work. But it is useless to confine effort to urging the higher ideals when we find that the average salary of assistant masters in England and Wales is only slightly above £3 a week, and when, out of nearly five thousand salaries, we discover only one £500, and two between £500 and £400. All but about thirty are under £300 per annum. For the time being some of the activities of the association must remain quiescent. But there is much work waiting to be done, many reforms to be taken in hand, as soon as the war is over. The war will prove, Mr. Saunders thinks, that our experimental English methods have not turned out so badly; but we are ready to go forward, and do better, if an opportunity is given us.

HISTORY AND CURRENT EVENTS.

THE war has, of course, seriously dislocated the trade of the world, and, even we in Britain, protected though we are by our fleet, are feeling the effects, not merely as producers, but also as consumers. We are realising how many of our daily conveniences have been normally supplied by those who are now our enemies. Neutral countries are discovering, too, what hindrances may be placed in the way of their mutual commerce when they come "between the pass and fell incensed points of mighty opposites." As in the war between Napoleon and Britain, yet not in the same spirit, the United States of America have protested against the action of the British Navy in exercising its "right of search" on the high seas. Then, that claim, with others of now obsolete nature, led to war because the two peoples were antagonistic in feeling. Now, disappointed in their expectation of celebrating a hundred years of peace, there is every probability of a satisfactory arrangement, even regarding copper, between the two "Anglo-Saxon" States. So much depends on the temper in which differences are approached!

THE Scandinavian States have a similar controversy with Germany as to the nature, contraband, or otherwise, of timber of various kinds, and whereas until now Swedish sympathy was with Germany because of her constant apprehension of Russia, and her remembrance of the Finnish and other conquests by her eastern neighbour, we understand that she is tending to side in sympathy with her neighbours in the north, and the Kings of Sweden, Norway, and Denmark have met in Malmö to concert united action; there have been rumours even of what we might venture to

call an "armed neutrality." Not so closely have the States of Scandinavia come together since before the period of the Reformation. In the fifteenth century all three kingdoms were, for a time, closely in the "Union of Calmar," afterwards more loosely united. But Gustav Vasa, following in the steps of other patriots, finally separated Sweden from Denmark-Norway in 1523. The Napoleonic changes united Norway with Sweden at Denmark's cost until, within recent memory, Norway "revolted." Are the three coming together again?

It has been strange, in reading recent books on the origins of the war, especially when they preface the more immediate story with sketches, more or less full, of modern history in general, to notice the different way in which European history is treated. In the face of a Germany which, within the memory of some of us, came into existence as a unified State for the first time in history, and has now made her first war against what we may almost call the rest of Europe, all our old ways of thinking are suddenly altered. We noticed changes of this kind in the later editions of Lord Bryce's classic work, "The Holy Roman Empire," but we would recommend our readers to take down from their shelves the late Prof. Freeman's first volume of essays and read again those reviews in which, while attacking Austria for her treatment of Italy, he exalts the medieval German Emperors, and protests against looking at European history through French spectacles. It all reads as "ancient" as Prof. Freeman's favourite Greek history.

DURING the war *Punch* has published collections of his old cartoons directed at various times against those who are now our open enemies—Turkey, Prussia, and the Kaiser in especial. Among these cartoons we have not found one referring to Wilhelm II.'s desire to pose as the Holy Roman Emperor, a desire the expression of which we noted in these columns some months ago. Yet that thought of the Hohenzollern's is as significant, and perhaps as explanatory of his present action, as any which has attracted more popular attention. For what was the extent of the medieval Empire, to which, in their various ways, Napoleon, the Austrian Kaisers, and the German Emperor have respectively claimed to be heirs? It did not stretch so far eastward as the present German Empire, but it included what are now Holland and Belgium, Alsace-Lorraine, and Switzerland, to say nothing of north Italy and lands between the Rhone and the Alps—what is now south-eastern France. Would a triumphant Germany claim all these?

Magnetism and Electricity. By S. S. Richardson. 508 pp. New and revised edition. (Blackie and Son, Ltd.) 4s. 6d.—This is a revised edition of a well-known text-book published in 1908. The chief alterations introduced appear to be the addition of a short chapter on the principle of the dynamo and motor, and a paragraph on the boundary conditions in a magnetic field. Paragraphs on radio-activity and on dimensions of physical quantities have been removed.

ITEMS OF INTEREST.

GENERAL.

THE number of applicants for registration received by the Teachers' Registration Council has now reached 4,760. A comparison of the average number of applications per week before the war with the average number during the past three months shows that the entries have been adversely affected to the number of about 1,500. In spite of this, however, it is clear that the register is generally welcomed, and that it will gain increasing support as time goes on. The Council is making preparations for the issue of the first official list of registered teachers, which will be published in May or June next. It is therefore important that those teachers who wish to have their names on the first list should apply without delay.

THERE is every indication that there will be a greatly increased number of registrations before the first list of teachers approved by the Teachers' Registration Council is published. At the meeting of the council on January 15th the reports from the chairmen of the various groups of teachers provided gratifying evidence of the earnest efforts of the various educational associations to persuade their members to register at once. We are glad to know that the council has under consideration Board of Education Circular 849, dealing with examinations in secondary schools. Judging from the want of unanimity in the council as to the wisdom of many of the Board's proposals, it will be some time before the final decisions of the Board are issued. Among the points which give rise to criticism are the suitability of the universities to act as examining bodies in secondary schools, the limited representation of active teachers on the Advisory Committee the Board proposes to establish, the feasibility of an interchange of certificates among universities for various purposes, and the possibility of persuading professional bodies to accept the certificates proposed by the Board.

IN Circular 885, issued on January 11th, the Board of Education states that there is likely to be some difficulty in procuring in this country adequate supplies of chemical laboratory glassware. These articles have ordinarily been imported from Germany and Austria, and they have not hitherto been manufactured in this country except in negligible quantities. Steps to ensure the production of chemical glassware in this country are being taken, but in view of the technical and other difficulties which have to be overcome it must necessarily be some considerable time before there can be production on a large and sufficient scale. Having regard to the extent to which many of the manufacturing industries of the country, including some of special value at the present crisis, require chemical glassware for analytical and other purposes connected with the various industrial processes, it is important that every effort should be made to economise in the use of stocks of such ware now in the hands of educational establishments. These stocks should be examined and a careful record kept of quantities and consumption. Every effort should be made to avoid breakages, and it will probably be

found possible to economise in the consumption of "Jena" vessels by the substitution in certain cases of other kinds of glass receptacles. Fresh orders should not be given to manufacturers or supplying agencies for the present, where this can possibly be avoided. The Board of Education is confident that local education authorities and schools and colleges will do their best to assist the Government in the matter.

A NUMBER of pacific Dutchmen—jurists, theologians, educationists, and others—met together at The Hague on October 8th last and formed an Anti-War Council (*Nederlandsche Anti-Oorlog Raad*). It is hoped by the promoters that under the influence of this body similar anti-war councils may be constituted in all the leading countries of the world, both neutral and belligerent. The aim of the councils in the neutral countries will be to use their influence at the earliest possible moment in the interests of peace; that of the councils in the belligerent countries will be to co-operate, when peace negotiations begin, in securing terms of settlement at once equitable and durable. The councils in the various countries are to get into touch with one another at the earliest possible moment, so as to organise a powerful movement in favour of a speedy and generally satisfactory termination of hostilities.

THE founders of this Dutch anti-war council feel that the failure of the peace societies of the past has been that they have worked in isolation, and that their efforts have not been concentrated and co-ordinated. They hope in the future to remedy this defect by means of organisation and centralisation at The Hague. Apart from this there is little or nothing novel in their programme. They advocate the usual peace society specifics against war, viz., reduction of armaments, international arbitration, democratic control of foreign politics, tariff conventions, and so on. It is to be feared that they all belong to the category of pills to cure earthquakes. They deal with superficial symptoms, and not with the deep causes of the war-disease. When a nation, like Germany, becomes possessed of the will-to-power; when it becomes filled with a conviction of its own superiority to all others, and with a passion for world dominance, all suggestions of limitation of armaments will be scouted, all proposals for arbitration will be rejected, all international conventions will be repudiated. Cosmopolitan peace societies will have as little effect in the future as cosmopolitan socialistic organisations have had in the present circumstances. The only hope lies in the reconstitution of the Concert of Europe on such a basis and in such a form that it becomes a real federal Commonwealth of Europe sufficiently strong in executive power to prevent any one of its members from destroying the peace of the world in the pursuit of selfish ends.

JUDGING from the indications which have come under our notice, we think there is a large number of men teachers of military age, both in elementary and in secondary schools, who are willing, nay anxious, to serve their country in the hour of need,

but who hesitate to enlist, because they are already engaged in an important public service which ought not to become disorganised, unless the country's peril becomes very serious. In respect of such teachers the Board of Education, after consultation with the War Office, has issued Circular 882. The Circular states that the special nature of the teacher's work will be accepted as a "genuine reason" why men teachers of military age, instead of enlisting at once, should be allowed to become enrolled in Volunteer Training Corps affiliated to the Central Association, of which Lord Desborough is president. Such persons will be subject to the condition that they must subsequently enlist if specially called upon by the War Office to do so. Teachers who feel called upon to remain at their posts, but who are willing to place their services at the absolute disposal of the military authorities in case of emergency, will thus be able meanwhile to prepare themselves as far as possible for that event.

THE resolutions concerned with the Board of Education Circular on examinations in secondary schools are enumerated on p. 64 of the present issue. Among other resolutions adopted by the Headmasters' Association the following are of importance:—(i) That in the opinion of this association instruction in the elements of military drill and the use of the rifle should form part of the education of all boys in secondary schools. (ii) That the association cordially approves the general principles laid down in the report of the Royal Commission on the Civil Service; and (iii) approves the recommendation that an additional Civil Service Commissioner with scholastic experience be appointed, with a view of promoting closer co-ordination between the educational system of the country and the examinations for entry into the Civil Service, but trust that in addition regular consultations will be held between the Civil Service Commissioners and associations of acting teachers. (iv) That while the staffing of schools on the principle of one teacher to a fixed number of pupils may be serviceable in large schools, it is not desirable for all, and least of all for the smaller schools. (v) That the association therefore urges that this principle should not be adopted by education authorities or governing bodies, nor countenanced by the Board of Education, but that in each case the curriculum and range of age of the pupils should be taken into consideration.

THE annual general meeting of the Association of Assistant-masters in Secondary Schools was held at University College, London, W.C., on January 2. Mr. G. D. Dunkerley, of Watford Grammar School, the newly-elected chairman for 1915, presided. The annual statement of accounts was presented by the chairman, and showed that the finances of the association are in a thoroughly satisfactory condition, the membership being at the present time well above 5,000. Mr. W. A. Newsome, the senior representative of the association on the committee of the Joint Scholastic Agency, made a report on the working of the agency during the past year. He was able to say that the support given to the agency by headmasters was increasing every year, and that the amount saved

in fees to assistant-masters during 1914 was no less than £400. The adoption of the annual report was moved by the retiring chairman, Mr. J. V. Saunders, of Hymers College, Hull.

THE following resolutions were submitted to the meeting and carried:—(i) That this association recommends those members of the association who have not yet applied to be registered, to do so as speedily as possible, in view of the necessity of continuing the work of organising secondary education, and also of supporting the Registration Council in dealing with educational reforms. (ii) The resolution on examinations in secondary schools printed on p. 65. (iii) That this association supports the policy of universal military training in all schools, while safeguarding the interests of conscientious objectors.

DR. H. R. MILL states in the *Times* of January 2 that the total rainfall recorded at Camden Square, London, N.W., during December was 6.34 in. This amount is greater than that of any December during the fifty-seven years over which the Camden Square record extends. The wettest previous December occurred in 1876, with 6.25 in. of rain. There have been only three months in which London has had a heavier rainfall—namely, June, 1878, with 6.71 in.; August, 1878, with 6.72 in.; June, 1903, with 6.43 in. The rainfall of December was not only unequalled in amount by any previous winter month but in duration also, rain having fallen for a total of 116.9 hours. The greatest previous duration recorded for December since the automatic gauge was established in 1881 was 90.4 hours in December, 1911, and the greatest duration in any other month 103.5 hours in October, 1882.

THAT the reform of English spelling comes within the sphere of practical educational politics was demonstrated by the attention given to it at the Conference of Educational Associations, held in the first week of January in London. In his presidential address Bishop Welldon mentioned the work of the Simplified Spelling Society as likely to remove one of the causes that made the English language difficult and prevented it from becoming as it seemed likely to be—the universal speech. Mr. F. W. Goldstone, M.P., secretary of the Organisation Committee of the National Union of Teachers, sent an encouraging letter to the meeting of the Simplified Spelling Society:—"As the result of considerable experience in the teaching of children I have come to the conclusion that very much valuable time is wasted in teaching the intricacies of English spelling. The curriculum is now so extensive that it would be of considerable advantage to divert some of the time now required for English spelling to subjects which would allow fuller scope for the cultivation of the initiative and observing faculties of children."

THE Northern Universities Joint Matriculation Board, constituted under the charters of the Universities of Manchester, Liverpool, Leeds, and Sheffield, to regulate the conditions of entrance to those universities, including the conditions of exemption from the matriculation examination, has recently made its re-

port for the year 1914. The board has examined 2,754 candidates in all during the year. Of these, 950 were candidates for matriculation under ordinary conditions at the July examination, and 282 in September; 400 passed in July, and 123 in September; the percentage of failure being 47.1 and 56 respectively. For university scholarships offered by local education authorities, or by universities, there were 462 candidates. For senior school certificates, 302 candidates entered, of whom 194 obtained a certificate that was also a matriculation certificate. The exemptions from the matriculation examination registered during the year on account of examinations recognised as equivalent were 277, a decrease of about 8 per cent. During the year, the board has made recommendations to local education authorities for the award of 111 scholarships tenable at universities. It has also conducted scholarship examinations for each of the constituent universities. Inspection or examination was carried out on behalf of thirty-four schools. The board has decided to remit all fees which may become due to it from students of the four Belgian universities or of the University of Lille who may enter any of the four constituent universities.

THE London County Council Education Committee has recently revised its prize list for public elementary schools. Its books and apparatus sub-committee reported that in the fiction section no great change is to be noticed in the relative positions of the most popular books. Andersen's "Fairy Tales" and "Robinson Crusoe" continue to hold the first two places. The following books take the order here named:—"Tanglewood Tales," "Tom Brown's Schooldays," Grimm's "Fairy Tales," Lamb's "Tales from Shakespeare," "The Heroes," and the "Old Curiosity Shop." "Water Babies," which showed a marked decline in popularity last year, comes next on the list. "John Halifax, Gentleman," which was fifteenth on the list last year, has dropped to thirty-third place. The reduced demand for this book as a prize is probably accounted for by the increasing extent to which it is read in the usual course of school reading. This applies to other children's classics which are now so widely read as a result of the development of the scheme for the circulation of reading books among the elementary schools. In the biography section, the lives of Nelson and Gordon continue to retain the first two places, but there is a decline in the demand. The demand for history is somewhat greater, and there is an improvement in the demand for books on nature-study. In the poetry and drama section the order of merit, according to the schools, is Shakespeare, Tennyson, Wordsworth, Scott. In the travel section Captain Cook's "Voyages" has displaced the abridged edition of Shackleton in the Antarctic at the head of the list.

THE annual meeting of the National Council of English teachers, held in Chicago at the end of November, 1914, showed once more the enthusiasm with which English is taught in America. The programme covered a very wide range, but the chief interest seems to have centred in the movements for voice training and better libraries. It is gratifying to find

that American teachers think highly of the efforts made in England to improve the speech of our people. However, we fancy they generalise rather boldly from the practice of some training colleges. In any case, seeing that America has always emphasised the value of oral composition, it is a little surprising to find American teachers still so dissatisfied with the present position of voice training. One of the speakers introduced a paper on the speaking voice in this way: "The American speaking voice, to use the bold metaphor of a friend of mine, is a stench in the nostrils of the world. Of all the great civilised peoples there is none which uses its own language so badly, in daily speech, as we do. . . . Yet without intelligent command of the voice in ordinary speech, mastery of composition—whether oral or written—and full understanding of literature, are almost, if not quite, impossible."

As a result of this paper a very large representative committee was appointed to make a thorough investigation of methods of voice training which could be applied to the common schools. The discussions on school libraries were even more interesting still. One speaker remarked that books fail of their greatest usefulness unless they are in charge of a librarian who is an inspiring guide in directing the pupil's reading. The books should be supplemented by collections of pictures and placed in rooms with plants and good furniture. An English "club-room" should open off the library. All this would cost almost as much as a science laboratory, but it would minister to the inner life of the school as nothing else can. Another speaker emphasised the need of co-operation between the schools and the public libraries, and the council eventually adopted a resolution recommending that the school authorities of each State should appoint a trained supervisor of school libraries.

At a meeting of the League of the Empire, held at the end of January, a scheme "for the voluntary study of the history of the Empire, with special reference to the importance of Imperial citizenship, as shown in the present international situation," was discussed.

SCOTTISH.

PROF. MEDLEY, Glasgow University, in addressing the Teachers' Guild (Western Branch), said that the English Board of Education had recommended at the present juncture that the history teaching in secondary schools should be specially concerned with European history from 1815 to 1871. Owing to the complications of international relations this was one of the most difficult periods in the whole range of history. He believed that it could only be effectively studied if a foundation were laid by a careful survey of the geography of Europe and of the possessions and colonies of the Great Powers. On turning to the more strictly historical study the teacher would find it would tend to clearness in the long run if the main countries in Europe were studied in the first place separately with a view of bringing out briefly the internal development, home problems, and external interests of each. After this preliminary study, the pupils

would be in a position to follow intelligently the broad outline of their international relations.

THE Historical Association of Scotland is doing excellent service at this time in demonstrating the practical utility of historical study. In all the large centres they have organised a series of lectures on historical subjects bearing on the war, and are also prepared to send to the outlying districts experienced lecturers provided local bodies will make all the necessary arrangements. The Glasgow series of lectures has been followed with deep interest by large audiences. Mr. Grant Robertson opened the course by a series of three lectures, two on the military problems of the war on the east and west frontiers respectively, and the other on the economic problems of the war with special reference to the position in Germany. Dr. Holland Rose delighted his hearers with a critical study of German world polity. Mr. A. D. Lindsay, Balliol College, Oxford, took as the subject of his lecture, "The German Idea of the State," showing that while English political thought regarded the State as a collection of individuals grouped together for mutual protection and help, German thinkers considered the State was an entity, and had an existence above and beyond its members. This theory was first promulgated by Hegel, and was popularised by Treitschke. Prof. Sanford Terry, Aberdeen, also lectured on German *Machtpolitik* and *Weltreich*. Other lectures have been arranged for throughout the spring.

THE committee of the Scottish Teachers' War Relief Fund has made a third distribution of the moneys collected. £700 has been given to the Prince of Wales's Fund; £400 to the Belgian; £200 to the Queen Mary Fund for Women; £100 to the Red Cross Society; £50 towards equipping a women's hospital in Serbia; and £50 to help to provide comforts for the Indian troops. Up to date the committee has allocated more than £5,000 among the various relief funds. The Prince of Wales has sent through his secretary a special letter of thanks to the committee for the third donation of £700, and has asked them to make known to the subscribers how highly he appreciates the continued support they have given him.

THE Joint Board of Examiners which controls the preliminary examinations of the Scottish universities has just issued its report for 1914. Once more the statistics display the most remarkable discrepancies, both between subject and subject and university and university. All theory of averages go by the board, and there is apparently a special providence watching over the students of Aberdeen and St. Andrews while in the examination room. In higher English, for example, 74 per cent. passed in St. Andrews, 35 per cent. in Glasgow, 41 per cent. in Aberdeen, and 45 per cent. in Edinburgh. In higher Latin St. Andrews passed 47 per cent., Glasgow 30 per cent., Edinburgh 46 per cent., and Aberdeen 100 per cent. The Joint Board will soon disappear under the new ordinance that is being prepared, and it will pass without regret as no confidence is felt in its standards or methods of examination.

IRISH.

THE Association of Assistant-teachers is of opinion that the grant of 40,000*l.* under the Act of Parliament passed last year may be lost. If so, it will be a grave reflection on the Irish Government. Before the Act became law it was legitimate to discuss its pros and cons, and if necessary to oppose it, but now it merely remains to draw up rules and regulations for its administration, and no one has the right to obstruct an Act of Parliament. The Act is for the payment every year of 40,000*l.* as a "Teachers' Salaries Grant," and it ought not to pass the wit of the Irish officials to formulate the conditions on which the grant should be paid in accordance with the Act. The rules must be presented to Parliament as soon as it meets, and if this is not done, the Irish members should insist on knowing the reason.

THE Department of Agriculture and Technical Instruction has issued a revised circular in reference to the classes in first aid to the injured, hygiene and emergency nursing, and ambulance work, which were formed on the outbreak of the war last August. Section i. of the regulations then issued is now withdrawn, and classes (except in very exceptional circumstances) will now be recognised only if conducted under the conditions of a local scheme of technical instruction. Any local committee already recognised, however, will be allowed to go on with classes in parts ii. and iii. of the department's syllabus for students who have already attended its classes in part i., but applications to conduct further classes in part i. must be made to the local Technical Committee.

THE Intermediate Education Board for Ireland has published the reports of the examiners on the examinations held last June. The comments are very useful, and many of the examiners take great trouble in giving detailed criticism. A schoolmaster may, however, be allowed to suggest that the examiners, some of whom—perhaps the majority—have never taught in an intermediate school, should acquaint themselves more closely with the conditions of the examination. To take three examples. Examiners in the first place need not be surprised if the honour papers in classics and modern languages contain a good deal of rough, unfinished work, seeing that they are very long and must be done in the very limited time of two hours. Again, examiners should be prepared for much poor work in the junior grade among pass students, many of whom have only taken up the subject complained of during the year, and have not reached a very high standard. Languages are often begun late, and the examination is a useful test for the student, even if he is backward, and it is no use for the examiner to say: "Surely boys ought to know this"; and "This can only be attributed to careless teaching"; under the conditions of the examination some boys will and some boys will not reach a satisfactory level. Thirdly, a science examiner complains of a considerable number of candidates presented who were either most indifferently taught or were mentally incapable of obtaining satisfactory marks. As all these candidates were subjected first

to a preliminary qualifying test by the department's inspectors, it is the fault of the latter if so many were unsuitable.

THE English of some of the examiners is affected by their subject. The German examiner says: "The passage in German handwriting was by many not even attempted"; and the Irish examiner: "Students would require greater practice in questions on applied grammar."

For detailed criticisms reference should be made to the reports, only some of the general remarks can be given here. The Greek examiner complains throughout all the grades of the neglect of stops, breathings, and accents, and of Latinisms such as *ἄνερ* for "black," and *ἀλβός* for "white." The history was satisfactory except in the junior grade pass. In Latin four of the six papers showed improvement upon last year. In the senior grade honours the averages were unchanged, and the only falling off was in the junior grade honours. Verse composition was very poor, and history was weak. In the senior grade, mistakes in accident were too common, e.g. *muribus, itinerem, maiora pars, fugerunt*, rules of concord were often neglected, and not one candidate in ten rendered the date correctly. The middle grade were weak in oratio obliqua, and the junior grade were ignorant of the quantities of common words. In French, on the whole, the standard of the previous year was maintained, but there was still very great weakness in the use of past tenses, reflexive verbs, *devoir, pouvoir*, spelling both French and English, and general style. The French examiner, together with the German and Irish examiners, was pleased with the results of the introduction of free composition. The German examiner comments on the untidiness of the papers as a feature of the middle and junior grades and on the use of old-fashioned spelling, and he complains that the candidates do not think in German. The Irish examiner is satisfied with the improvement in the teaching of Irish in recent years except in the junior grade pass. The knowledge of grammar, however, is poor in all grades, and there was weakness throughout in personal and place names.

THE English examiner gives some useful hints on composition. The setting of subjects for essays taken from the year's programme in English has enabled pupils to write clearly and intelligently, but the form tends to be stereotyped, and there is a lack of originality. Pupils had regarded Gulliver's Travels as a sober chronicling of facts, and had little idea of the elements of scansion of Scott's and Ferguson's poems. The history and geography come in for general condemnation. Similarly the examiner in history and historical geography complains that a large percentage of the pupils did not seem to understand the most elementary terms, and that the use of blank maps in the examination brought out the fact that the use of maps in the teaching of history is far from general.

In arithmetic the results, on the whole, were satisfactory, though very few succeeded in answering the

question on principles. The general mistakes were carelessness of work, errors in transcribing the numbers given in the questions, inattention to the conditions of the questions, the absence of a sound knowledge of principles, an inexact knowledge of the metric system, and a lack of ability to perform easy exercises in division of decimal numbers. In algebra the prevailing defects were neglect of revision and verification, and a tendency to try to learn bookwork by heart and to reproduce it mechanically and imperfectly. The introduction of deductions into the geometrical course for pass students resulted in an increase in the number of candidates failing, and in a general lowering of the marks awarded this year, in comparison with the last few years. In many cases failures were registered because proofs had been taught which could not be accepted, and the examiner laments the departure from Euclid's sequence. The examiner in trigonometry marks improvement in this subject; in the use of logarithmic tables he inserts a decalogue of "dont's."

WELSH.

THE National Library is making notable progress: the first block of buildings is in an advanced state, the book-cases are in hand, and it is hoped to begin to fill them in the spring. Of the £106,000 required for the buildings only £9000 has still to be raised. The library has been added to the list of those which, like the British Museum, the Bodleian, the Advocates' Library in Edinburgh, Trinity College, Dublin, and others, receives a copy of every copyright book.

THE Welsh Town-Planning and Housing Trust, which has been in existence nearly two years, has been accorded a welcome co-operation by many local authorities, which have in consultation with the trust, assented to important modifications in their building by-laws. A special appeal is made to colliery owners and other employers of labour on a large scale to avail themselves of the special knowledge and expert advice which the trust is able to put at their disposal. Wales already possesses some of the loveliest model villages—as, for instance, Llandegai; but parts of some of the colliery villages, and even of more important towns, are of the last degree of dreariness and ugliness. There is a great work before the trust.

CARDIFF EDUCATION COMMITTEE recently spent ten minutes in deciding whether to use the words "write to," "communicate," or "intimate" in a certain resolution. The difficulty was in the end overcome by dropping the whole resolution.

THE Welsh National Museum building, which forms one of the splendid group of buildings in Cathays Park, Cardiff, is progressing rapidly, and it is hoped to have the roof on by the summer. Twelve sculptors sent in designs for the decoration of the building, out of whom Messrs. Boyes, Garbe, and Clapperton have been requested to carry out their designs on half-scale. The subjects are "The Stone Age," "The Bronze Age," "The Coal Age," "Mining," and "Shipping." Mr. D. A. Thomas and Mr. Bertram Pegram, of Cardiff, have been asked to supply designs

for the lions and dragons which are to appear round the base of the dome.

A WELSH sculptor has reached the final stage in a competition in Philadelphia. A £6000 statue is to be erected to the memory of Robert Morris, and a Llandilo man, Mr. John Thomas, who went to the States some thirty years ago, has had his design included in the four selected for the final choice.

SPEAKING at the meeting of the Newport Welsh Society on January 5th, Mr. H. A. Hill quoted the authority of Dr. Crotch for the statement that Welsh martial music was superior to that of any other nation, and claimed that the melodies of the eleven hundred existing Welsh folk-songs had provided great store of material for composers of other nationalities. It is interesting to note that Miss Gee, of Denbigh, is taking steps to have words and music of Welsh national airs sent out to Welshmen at the front, in the hope that they may replace songs of the "Tipperary" type.

FIRE PREVENTION.

Suggested Precautions for the Protection against and Extinction of Fire in Elementary Schools, Boarding Schools, and Public Schools.

THESE three short pamphlets have been issued by the Hospitals and Schools Committee of the National Fire Brigades' Union, 22 Northumberland Avenue, London, W.C. The pamphlet dealing with elementary schools first describes the necessary plant with a special note on laboratories, and what action to take in case of an outbreak, both to clear the building and to attack the fire. The problem of boarding schools is, of course, complicated by dormitories and darkness, and hence more elaborate arrangements are essential. Here we have some of the ground covered in the first pamphlet, but in addition careful attention to emergency exits, fixed appliances for escaping from upper windows, and first aid fire brigades. The public school, having older boys, and being generally in country districts, is recommended to have a fire brigade of its own, and some helpful recommendations are given as to its organisation.

The pamphlets have been drawn up carefully, and many hints are given, e.g., the best method of enclosing bolts on emergency exits, the barring of windows, working in smoke, the dropping of rope escapes, picking up fallen pupils, the shutting of doors and windows in the event of fire, the dangers of locked-up store-rooms and cupboards, and so on. We are glad to see it insisted that fire and escape drills should be practised *regularly*; even one practice is worth tons of printed instructions, and is the one and only method of securing against panic so far as is humanly possible. We should have been glad if the instructions on clearing a building, which are printed in the sheet on elementary schools, had been printed also in both the others; for boarding schools should be prepared to clear their buildings as well as day-schools. It might perhaps have been added that light is the greatest allayer of panic, and therefore, when buildings are being cleared at night, jets where and when possible should be lit until all the pupils are out.

The notes on the formation of a school fire brigade are helpful and suggestive. These, with the union's

"Handbook on Fire Drill," should clear away most difficulties. We doubt the wisdom, however, of the advice to concentrate attention on the house brigades in the two winter terms, and on the school brigade in the summer term. For be it remembered that the older boys should form the school brigade and most of them will leave in July, when the school year ends. It would seem better to have school brigade fire drills regularly once a month throughout the year.

We heartily commend these little pamphlets to all those who have charge of boys and girls, and we may add that "the union has decided to examine the staffs of hospitals and schools who are trained in fire drill, on being requested to do so by the authorities in charge thereof, and also to give any information or assistance with the establishment of gear, etc., for the protection of life and property."

FOUR BOOKS ON THE WAR.

The Third Great War in relation to Modern History. By L. Magnus. 187 pp. (Bristol: Arrowsmith.) 1s. net.

The War: Its Origins and Warnings. By F. J. Adkins. 227 pp. (Geo. Allen and Unwin.) 2s. 6d. net.

The Origins of the War. By J. H. Rose. 201 pp. (Cambridge University Press.) 2s. net.

Right Against Might. By B. S. Woolf (Mrs. Lock). 43 pp. (Heffer.) 1s. net.

MR. MAGNUS has been struck with the rime of the dates 1715, 1815, 1915, and sets out to expound the unsatisfactory nature of the first two of these settlements, incidentally introducing also the peace of Westphalia. He regards all three arrangements as imperfect, and, indeed, as but starting-points for future wars, and leads us to expect from him some hints as to the way in which the present war should be ended. If he had fulfilled this expectation we could have forgiven the often curious arrangement of his matter and the forced parallels he sometimes makes, but his last chapter is disappointing in this respect, and we get only some vague proposals for a democratisation of diplomacy—at least, so we understand him.

Mr. Adkins has travelled in the countries concerned in the war, except the Balkan States and Japan, and his book consists of an account of Germany, France, the Slavs, and England. He sets forth the ideals of the first three, contrasting them with the lack of ideals in England. Germany, he says, is superior to us in town development because, coming into the industrial revolution later than we, she was able to profit by our mistakes, and both Germany and France are superior to us in their devotion to art, especially that of the theatre. His "warnings" are that we should cease to be "secure" behind our fleet, study Continental history and peoples, and "think hard." These ideas are introduced by historical sketches, slight for the earlier periods, but, especially with regard to Germany, very full for recent years. We do not propose to discuss Mr. Adkins's conclusions, as to which there is much that can be said on both sides, but we very warmly recommend his book to the notice of our readers.

Dr. Rose is well known for his studies on the period of Napoleon and on nineteenth-century history in general, and in this little book he traces the history of Germany from 1875 onwards. Basing his information on the best books, on official information, and once at least on private information, he treats in eight chapters of Anglo-German rivalry in the time of Bismarck, of the present Kaiser, of Germany's

world-policy, of Morocco and the Bagdad Railway, of Alsace-Lorraine, of the Eastern Question (1908-1913), of the crisis of 1914, and finally of the rupture. We can conceive no more illuminating book on what, but for Dr. Rose's own warning (p. 2), we might regard as the inevitable war, and those of our readers who master its contents will go far towards carrying out the advice given them by Mr. Adkins. Both Mr. Magnus's book and this have an index, and Dr. Rose gives us besides in appendices the shipbuilding programmes during the last ten years of England, Germany, and France, and an account of German plans in South-West Africa.

Mrs. Lock's little book is written apparently under the auspices of the League of the Empire, and is intended for young readers. Its title sufficiently indicates its spirit, and we need do no more by way of recommendation than mention the sixteen photographic illustrations with which it is adorned.

RECENT SCHOOL BOOKS AND APPARATUS.

Modern Languages.

J. Stinde, Die Familie Buchholz. Edited by G. H. Clarke. xi+75 pp. (Cambridge University Press.) 2s. 6d.—It is satisfactory to find that the Cambridge University Press is bestirring itself to issue texts edited on reform lines, and the present volume may be greeted as a good forerunner. The book, from which extracts are here given, is very popular in Germany, and presents a humorous picture of middle-class life. Mr. Clarke, who is an experienced teacher, provides German questions on the text, exercises in vocabulary and in grammar, five skeleton outlines for *Nacherzählung*, and a vocabulary. It is somewhat disconcerting to find what we may call international grammatical terms (e.g., *Adjektiv, Präteritum*), beside others that are purely German (e.g., *Zeitwort, Leideform*). The text is clearly and carefully printed. The only slips we have noticed are *aufgestellt* for *angestellt* (p. 55), *ein zusammenhangende* (p. 57), *zum Weihnachten* (p. 57). The *Nacherzählungen* are not on good lines; there are better ways of guiding the pupils to self-expression.

The Adventures of Baron Münchhausen. Edited by W. H. Anstie. xv+116 pp. (Bell.) 2s.—The famous tales of Baron Münchhausen, as rendered into German by the poet Bürger from Raspe's English original, will make amusing reading for a second year class in German. The selection here presented contains the best-known incidents, of which illustrations have been provided by a German artist. The text of each short story is followed by good explanations in German of difficult words and phrases, and by questionaries and reform exercises, as well as short pieces for retranslation. There is also a German-English vocabulary, which "is perforated, and can be removed by those who think it desirable"; in the copy before us the perforation is very imperfect, and the pages could not be removed without tearing. The editor has on the whole done his work well, and slips are rare. "Worin legte er sich?" (p. 3) is scarcely correct; "Mönche (th=k)" (p. 10) should be "ch=k"; similarly "v=w" (p. 35) should be "u=w"; "Klafter" (p. 44) should be "Klaftern"; "Stelle" (p. 57) should be "Lage"; "Wallfisch" (p. 62) should be "Walfisch"; pearls are not "Edelsteine" (p. 76). The book is printed in good German type, but there are many slips, showing that the printers have little experience of setting up German; the two kinds of *s* are frequently confused (e.g., on pp. 1, 9, 18, 19, 31,

47, 60, 69, 77), *s* is put in place of *f* (pp. 2, 23, 59, 63, 65), *Ue* in place of *Ü* (pp. 4, 20, 29, 53). We have also noted *wochentlich* (p. 9), *probiere* (p. 11), *uber* (p. 37), *schrechen* (p. 42), *glücklich* (p. 89), and the wrong use of capitals or small initials (pp. 22, 25, 27, 51, 53, 62, 75, 90).

Classics.

Caesar, Gallic War, III. Edited by E. S. Shuckburgh. xiv+78 pp. (Cambridge University Press.) 1s. 6d.—This is a further volume in the new illustrated edition of the "Cambridge Elementary Classics," which we welcomed in our issue of last October, and is fully as attractive as its predecessors.

T. Livy Ab Urbe Condita. Liber iii. Edited, with introduction and notes, by P. Toresby Jones. 281 pp. (Clarendon Press.) 3s. 6d.; or (without vocabulary) 2s. 6d.—This is the new Oxford text and *apparatus criticus* by Profs. Conway and Walters to which Mr. Jones has affixed introduction, notes, and vocabulary for the use of schoolboys. In the introduction he deals with such subjects as the life of Livy, the method, sources, and credibility of his history, peculiarities of his style and the historical situation with which Book III. is concerned. The result is a useful school working-edition, but the notes are far too overloaded for schoolboys. We cannot too strongly insist that school notes shall be reduced to a minimum. A hundred pages of notes, such as this volume contains, fills a boy's mind with a sense of helplessness in face of the vast amount of knowledge which it seems essential to have before one can read a few pages of Latin.

The Iliad of Homer. Done into English prose by Andrew Lang, Walter Leaf, and Ernest Myers. Revised edition. vii+506 pp. (Macmillan.) 3s. 6d.—The merits of this translation of the *Iliad*, as well known as those of Messrs. Butcher and Lang's *Odyssey*, need no mention here; but students will be grateful that the book is now obtainable at such a low price in Messrs. Macmillan's familiar "Globe Library." Both type and paper are much superior to that of some of the volumes of this series, and are wonderfully good for the price.

Euripides, Heracles. By O. R. A. Byrde. xvii+text+61 pp. (Clarendon Press.) 2s. 6d.—This is the Oxford text preceded by a short introduction, followed by some fifty pages of notes. The introduction deals briefly but lucidly with such questions as the ritual of the *Vegetation Spirit*, the function of the chorus and the development of the Heracles myth and its special treatment by Euripides, in all of which Mr. Byrde is a follower of Prof. Murray as opposed to Dr. Verrall. The notes deal with questions of interpretation, of readings, and of special Euripidean usages in a very sensible manner. Altogether it is an excellent little edition for sixth-form boys.

The Englishman's Latin Dictionary (Latin-English and English-Latin). By S. C. Woodhouse. 491 pp. (Routledge.) 2s.—This is a very handy and compact little volume, which is just what is required by those who, while not themselves classical scholars, are likely to come across Latin things from time to time in their work, as all schoolmasters must do. All varieties of Latinity are included, and, of course, no attempt is made, in so small a volume, to give authoritative passages or even names of authors. The English-Latin section seems fairly free from the vices usual to such a compilation. It is well worth 2s. to any schoolmaster who needs nothing more elaborate.

English.

A Short History of English. By H. C. Wyld. 240 pp. (Murray.) 6s. net.—When the title of the book is taken along with the author's name, we know what to expect; but for the average student the title is a misnomer. The chapters deal with the position of English among languages, the sounds of speech, the history of English sounds, a sketch of inflexions, and the origin and development of literary language. Mr. Wyld says in his preface that he has decided to leave out vocabulary altogether; so that, except for the pages dealing with general questions, thirty-eight in number, the book is devoted to sounds. These general questions, touched on so lightly, are precisely those which, *pace* Mr. Wyld, have never been done well for the student, and books on the sounds are much easier to obtain than books on the history of English. Still, we must be glad of the learned guidance of one who knows his subject thoroughly, though we want, even in the history of vowels, much more help; dialectal varieties might be fully quoted for and, to take one instance only, the modern slack O, it would be interesting to note the Canadian variety. Perhaps some day a writer (Mr. Wyld says the material is not ready) will treat slack O from the beginning to its ruinous breakdown in class dialects of to-day; it is almost a shibboleth in modern English, and the working man mimic makes admirable fun of it. The whole question of class dialect is dismissed in a page or two. We could have spared quite eighty pages if the author had told us more about the subjects of the remaining hundred and sixty. Mr. Wyld refers in the bibliography to a few of his own contributions; but a list of essays, including a complete list of his own on out-of-the-way questions, would have been welcome. We say all this because now our author is our main writer on the fascinating subject. The name of Wright does not occur in generally useful dictionaries of provincial and obsolete terms, and even with Wright the student is miserably equipped, and his book is out of print. Dr. Bridges is not thought worthy of mention, and there is throughout the book just enough to make the reader want more.

The Colloge Chaucer. Edited by H. N. McCracken. 713 pp. (Oxford University Press.) 6s. 6d. net.—The reader would think from the title that he had in his hand another Globe Chaucer; instead, the volume is an expurgated selection from the Ellesmere MS., the minor poems being given from various sources. No account of the MSS. is added, and thus the value of a first-hand acquaintance with the Ellesmere and others is interfered with; no facsimiles are introduced; and if the price had allowed, it would have been well to reproduce at least twenty pages of some MS. The book contains an admirable glossary, but it is too elementary even for a beginner. We should like to know what authority there is for the usual interpretation of the line given by all editors, "ful semely after hir mete she raughte." Troilus is omitted, but the notorious Wife's Prologue is given. Again and again editors are invited to give the student a ruling for their theories (they are nothing more) on the sounding of the final "e" at the close of a line; none of them deal in anything but dogmatism. Yet on this the music of Chaucer mainly depends. It is a distinct advantage to have a MS. before us; and we hope the volume will be followed by another which will clear up a good deal that the student, for all the editions, is in need of. Chaucer is much more modern than Spenser, and is at last really popular; and the editor deserves all our thanks for this moiety; "with that myn hand

he tok in his anon, Of which I confort kaughte, and went in faste."

American Literature for Secondary Schools. By W. B. Cairns. 341 pp. (New York: The Macmillan Company.) 4s. 6d. net.—The value of this book is that it takes us up to to-day; and many writers whom on this side we know of only by name are here treated fully. As in similar volumes "suggested topics" are added; but no editor gives examples of the way in which they should be handled. Any student would find it useful if four or five answers were "suggested" to these questions: "Hawthorne's handling of the supernatural"; "What seems unpoetic in Whitman?" It is so easy to ask examination questions. We miss any full account of Henry James and even of Howells; and many names might have been omitted for a fuller note on those who are, in the true meaning of the term, literature. An additional index gathering together some of the little masterpieces, in which America need fear only France as a rival, would have been welcome. Do American writers on literature admire what they should?

History of English Literature. By A. S. Mackenzie. 477 pp. (New York: The Macmillan Company.) 5s. net.—This is an excellent elementary book of the Anna Buckland type, furnished with a catholic set of illustrations. One can imagine it in the hand of a teacher who sits surrounded with texts, and expounds as the children read. It would be a fine thing for a teacher to possess and be able at a moment's notice to refer to the books mentioned, say in chapter v. A hundred dollars would not buy them, and we do not believe a single school in America possesses them. Until the teacher sits among books, literature will continue to be sign-post and nearly worthless. This volume takes us up to to-day, and some of the criticisms, e.g. that on Mr. Galsworthy, are not extensive but peculiar. But the whole book is alive—if the teacher is, too.

History.

Six Constitutional Documents. Prepared by the Council of the Historical Association. (Bell.) 1d. each.—The Historical Association, in order to encourage the use of original sources in the study of English history, has published a series of six important documents illustrative of the growth of the constitution. These are (i) "The Charter of Henry I.," translated from the Latin; (ii) "Magna Carta," translated; (iii) "The Petition of Right"; (iv) "Habeas Corpus Act"; (v) "The Bill of Rights"; (vi) "The Act of Settlement." Each has a short introduction, and each is printed on one side of the paper only, in such a way that it can be cut into sections and pasted into pupils' notebooks for annotation.

Bannockburn. By Dr. J. E. Morris. vi+107 pp. (Cambridge University Press.) 5s. net.—In 1913 Mr. W. M. Mackenzie, the accomplished editor of Barbour's "Bruce," published in Scotland a study of the battle of Bannockburn, which completely abandoned the orthodox view as consecrated by six centuries of tradition. He propounded new and revolutionary theories as to (i) the numbers of the combatants; (ii) the site of the battle; (iii) the strategy and tactics of the fight. Dr. Morris, the historian of the wars of Edward I., was naturally keenly interested in Mr. Mackenzie's researches (which he discussed sympathetically in the *English Historical Review*, January, 1914). He has now, in company with Mr. Mackenzie, been over the ground, surveyed all the evidence, and presented the results of his examination in the excellent volume before us. He accepts substantially Mr.

Mackenzie's results, and he makes them clear to the English reader, for whom the book is primarily intended, by means of admirable photographs and plans.

William Pitt and the Great War. By J. Holland Rose. xiv+596 pp. New and cheaper edition. (Bell.) 7s. 6d. net.—It is three years since this standard work appeared in its original edition. Its publication in a cheap form at the present moment is opportune, for Britain is now engaged upon a still greater war, and only the spirit and resolution of Pitt can bring her safely through it. It is superfluous to commend Dr. Rose's book, since, with its predecessor, "Pitt and the National Revival," it is generally recognised as the most authoritative account of the great statesman of the Napoleonic era.

English Economic History: Select Documents. Edited by A. E. Bland, P. A. Brown, and R. H. Tawney. xx+730 pp. (Bell.) 6s. net.—This is a remarkably valuable addition to the available source-books of English history. It consists of three parts covering respectively the three periods, 1000-1485, 1485-1660, and 1660-1846. In all there are more than three hundred documents, or parts of documents, illustrating the social, industrial, and commercial development of England. They are drawn from a wide field, selected judiciously, and when necessary, translated. The book, which is excellently printed and bound, will be an indispensable work of reference to all students of economic history.

The Wars between England and America. By T. C. Smith. 256 pp. (Williams and Norgate.) 1s.—There have been two wars between Great Britain and the country which grew to be the United States of America, that of 1776-83, in which the thirteen colonies gained their independence of Great Britain, and that of 1812-15, called sometimes by the Americans their second war of independence, because they were fighting against what they regarded as British interference with "sailors' rights." Prof. Smith, in telling the story of the origins of these wars, travels over a wide field. He begins by explaining historically the differences between the aristocratic England of 1763, with her mercantilist theories and practice, and democratic America, especially New England, with her commercial needs and desires. He follows the usual story of the quarrel between the mother country and her colonies, taking care to be fair to both sides, and showing how the Americans were never quite unanimous in their opposition. The internal jealousies of the colonies during the war are portrayed, partly to lead up to the interesting chapter in which he shows how and why the colonies were led to make the closer union of 1793. The constitutional history of the United States in the following years is told pretty fully, in order to explain the later quarrel, and the Napoleonic dealings with America are narrated so as to give the reasons for the second war. That war practically outlasted the reasons which gave rise to it, and with the advent of European peace came the beginning of the century of peace between England and America, which was to have been celebrated this year.

Geography.

Economic Geography. By John McFarlane. 560 pp; maps and diagrams. (Pitman.) 7s. 6d. net.—Mr. McFarlane is lecturer in geography in the University of Manchester, and in his book has "endeavoured to divide the countries of the world into natural regions and to trace the influence of the geographical conditions of each upon the economic life of man within it." We laid down the work with a sense of dis-

appointment; perhaps the official position of the author led us to expect too much, or perhaps the comparative lack of really good illustrations gave rise to a feeling of inadequacy. It is difficult to place the book, for there is a faithful attempt to present the details of the economic life of different communities, and yet there is little suggestion of the wide outlook and illuminating exposition which might be expected; general conditions are compressed into three chapters which comprise but twenty-six pages. The general chapter on vegetation almost entirely consists of a cyclopædic account of some twenty odd of the chief vegetable products; and here the date-palm receives equal treatment with tea. The general chapter on climate is based upon a consideration of the circulation of the atmosphere in which the air movements in high altitudes are assumed to be scientifically determined; in view of the known reticence of the director of the Meteorological Office in reference to these air movements, it will be obvious that the author's ideas may be premature. In this connection a protest may surely be lodged against the phrase "the trade winds have been sucked in from their usual course by the continental low-pressure area," which suggests that a low-pressure area is an active agent capable of suction, instead of the fact that a low-pressure area is merely a convenient geographical term which specifies the atmospheric condition of the locality. The details of the economic facts are, as a rule, accurate and comprehensive, yet we notice a definite lack of world-wide grasp of matters of economic importance, which suggests that Mr. McFarlane does not wish to emphasise world relationships as the most important factor under modern conditions. For example, in the case of the United States it is noted that the cultivation of cotton tends to be insufficient to meet the demands of modern consumption, while the similar facts regarding wheat and meat are not stated; at the same time local details regarding the American production of rice and sugar are given, while the relative position of the United States as a producer of these food-stuffs is not emphasised.

College Physiography. By R. S. Tarr. Published under the editorial direction of Lawrence Martin. xxii+837 pp. Maps, many in colour, diagrams, and photographs. (New York: The Macmillan Co.) 15s. net.—This text-book of "College Physiography" will rank, not only as the late Prof. Tarr's chief systematic work, but as probably the most important publication in the realm of physical geography during several years. It will stand high for many years to come as a standard authority rivalling in its influence on teaching, both in England and America, the work of Prof. Davis and Dr. H. R. Mill. The major portion of the book had been written by Prof. Tarr ere his earthly labours ceased, and Prof. Martin has contributed seven chapters, and seen the book through the press; this work has, no doubt, been arduous, but the care, which the editor has displayed in preserving the continuity of presentation and in maintaining throughout the orderly development of a comprehensive survey of the present state of earth-knowledge, will be amply repaid by the reception which this book will have among professors, teachers, and students of geography. The diagrams, etc., are illuminating and apposite; the maps reveal with precision the point which they are intended to demonstrate; the photographs are excellent. The subject-matter of the illustrations, both verbal and pictorial, is frequently American, and English teachers will put the book on the shelf ready for frequent reference, but will wish that someone would write an equally illuminating and thorough volume in which the features of the British Isles had been subjected to similar exhaustive

analysis. Until that book is published they will gain immeasurably by frequent reference to Prof. Tarr's book.

The Atlas Geographies. Part iv., Commercial Geography. By T. Franklin and E. R. Shearmur. 232 pp. (Johnston.) 3s. net.—The authors continue to add to this series; the new volume maintains the style of the earlier issues. Much of the matter in the later pages will be familiar to readers of the earlier volumes. Most of the maps are good, many are excellent, but the two isotherm maps of the world are poor. The statistical tables in the earlier pages are calculated at times to give erroneous impressions, notably in the case of wheat. Is it a curious effect of the war that German statistics, but not those of Austria-Hungary, are deleted from these tables?

Mathematics.

Fergusson's Percentage Trigonometry. By J. C. Fergusson. 164 pp. (Longmans.) 3s. td. net.—It occurred to Mr. Fergusson (who is an engineer) that much time and labour would be saved if surveying instruments, such as theodolites, were graduated so as to indicate not the angles, but the tangents of the angles measured. He therefore divided the circle into octants graduated from 0 to 100, the graduation x corresponding to an angle $\tan^{-1}(x/100)$. He also spent nineteen years calculating tables of the sines, cosines, angle corresponding to tangents, which proceed by equal increments, and has published them under the title of Fergusson's Percentage Unit of Angular Measurement at the price of £3 3s. We are told that "this great work brings with it the greatest revolution in geometry and plane trigonometry since the days of Pythagoras, 550 B.C." Mr. Fergusson's idea is really a very useful one, and it is a great pity that he should spoil it by talking nonsense. He seems to think that Euclid I., 47, has been superseded by his discovery. "All problems in plane trigonometry are reduced to simple arithmetic, including oblique triangles, by Fergusson's Two Rules, both of which are rigorously right." On examination we find that these rules, when expressed in the usual notation, are simply $\tan A = a/b$ in a right-angled triangle, and $\sec A = (1 + \tan^2 A)^{1/2}$.

With the aid of these formulæ, any engineer, navigator, or scout, provided with one of Mr. Fergusson's percentage theodolites or compasses, can certainly solve rapidly any practical problem relating to the determination of heights and distances, and is able to do this without using tables.

Mr. Fergusson's instruments are useful, but his treatise on trigonometry shows that his knowledge of mathematics is very elementary.

Elements of Geometry. By S. Barnard and J. M. Child. Parts i.-vi. ix + 465 + xxxviii pp. (Macmillan.) 4s. 6d.—A significant feature of this book is the reversion to Euclid's methods in the treatment of parallels and tangents, a course also partly pursued in dealing with the theorems of Euclid, Book II. Seeing that the authors have had eleven years' experience in teaching on the lines suggested by the Mathematical Association, their action indicates that the expectations of the leaders of the revolt against Euclid have not been altogether fulfilled. What we have here offered to us is substantially Euclid's elements rearranged so that the theorems relating to a definite subject are grouped together, and supplemented by the insertion in their appropriate places of those additional propositions which are now regarded as worthy of a place beside the older ones. References to the Euclidean numbering are given. Examples are very numerous, and consist of riders as well as of

numerical and constructional exercises. Altogether we regard this as one of the best geometries for secondary schools which has appeared in recent years. It should appeal to teachers who have not their eyes fixed exclusively upon the utilitarian aspects of the science, for though these aspects are not ignored they are not allowed to predominate.

Elementary Geometrical Optics. By A. S. Ramsey. xi + 173 pp. (Bell.) 6s.—The development of the formulæ relating to the first-approximation theory of the action of optical instruments may be effected in terms of distances or of inclinations, the latter being the more modern method. Mr. Ramsey, however, considers the distance method is simpler for beginners, and he has therefore used it throughout. The question of sign also arises, and the author's experience is that there is less mental confusion and liability to error when only one direction is regarded as positive. Unfortunately, the observance of this convention leads to the fundamental relation between conjugate focal distances appearing in the form $Auv + Bv - Cu - D = 0$, involving two negative signs; and this conflicts with the usual method of writing the homographic relation. However, apart from this, the treatment of the subject is exceedingly clear, and the reader will find the examples worked in the text very helpful. There is also a considerable number of examples selected from those set in recent college examinations and the Tripos.

Science and Technology.

Paper Folding and Cutting for Seniors. By W. S. Bartlett, H. Wainwright, and W. G. Glock. 128 pp. (Pitman's Handbook Series.) 2s. net.—This is a somewhat artificial scheme of exercises and models produced by considering in detail various geometrical figures and their "extensions." It would be interesting to know the age of the "children" for whom the authors are writing; exercises on triangulation and its application to field work (p. 27), the theorem of Pythagoras (p. 53), ratio (p. 20), and similar mathematical problems, suggest pupils capable of more exacting manual work than that involved in the rather trivial paper models and toys treated in this book. The objects of the book—among which are "to encourage and guide the habit of self-expression" and "to invest the skeleton of abstract geometry"—are most laudable, and there are twenty-seven plates illustrating a number of pretty objects; but the method adopted does not appeal to us as educationally sound. To discuss the triangle, hexagon, circle, prism, cone, etc., apparently as geometrical abstractions, and afterwards to consider into what "extensions" they can be moulded, if not a poor method, is at least an inversion of the generally accepted principle which Mr. Branford has stated somewhat as follows: the path of the most effective development of knowledge in the individual coincides roughly with that historically traversed by the race.

Correlative Light Woodwork. By J. G. Adams and C. A. Elliott. 215 pp. (Harrap.) 3s. 6d. net.—This little manual has been compiled with a view of meeting the suggestions contained in the Memorandum of the Board of Education on Manual Instruction in Elementary Schools, and mainly in the direction of filling the gap which is admitted to exist between the kindergarten work of infant schools and the heavier work undertaken at the manual training centres attended by upper standards. It outlines a course of what is known as "light woodwork," to follow the usual preparatory course of work in plasticine, paper, and cardboard. Stress is rightly laid on the importance of using the course in conjunction with other subjects of the curriculum, and following many

of the exercises we find suggestions for correlated lessons in "arithmetic, geometry, nature-study, science, history, and geography, map-drawing, English, object-drawing, and mass-drawing," while there are full notes on method. The authors' net is wide, and much of the work is sound; we have not, however, found what should undoubtedly have been added—a warning as to the dangers of false or forced correlations. The notes on aim, equipment, preparation, and the suggestions on working the scheme, are admirable; there is a chapter on literature and hand-work of some interest if of doubtful value, and the teacher who desires to extend his acquaintance with the development and extension of manual training schemes might do worse than add this book to his library. We are nevertheless of the opinion that much "light woodwork" ruins the sense of proportion. The ideal at which to aim should be the construction of objects of real use on a practical scale, not the imitation of such objects on a kindergarten scale. While a few of the objects shown on pp. 160, 176, 198, and 199 are satisfactory and really practical, the only justification for extending the work so widely is lack of workshop accommodation.

Preliminary Machine Drawing Course. By C. E. Handy. (Longmans.) 40 pp. 1s.—This little book is intended for use in evening preliminary technical courses and day junior technical schools, and opens with ten geometrical problems of a simple character. A number of dimensioned sketches of machine details follow, these being almost entirely in isometric projection. We are told that the book is intended to be used in conjunction with models, and that the student is expected to sketch into his notebook, from the pictorial views in the book, the views that he has subsequently to draw on his drawing board. We do not think that this procedure is to be recommended. If models are available, the best plan is for the student to sketch the views required direct from these; he ought also to measure the dimensions from the model. We note several omissions; thus, no directions for drawing a nut are given; the brasses on p. 27 are not "halved"; the nut will shoulder on the piston rod on p. 34. The book seems to have been compiled rather hastily.

Metal-work; a Handbook for Teachers and Students. By H. M. Adams and J. H. Evans. xii+336 pp. (Edward Arnold.) 5s. net.—The subjects treated in this book are divided into three parts:—(1) The metallurgy of the metals used in the handicraft-room; (2) tools and processes; (3) workroom equipment, scheme of work, and teaching methods. The first part contains a simple account of the properties and manufacture of the common metals and their alloys. In the second part the adequate practical knowledge of the authors is clearly expressed; this part contains a capital account of ordinary workshop tools and the methods of using them. The authors wisely present no model courses of work to be adopted wholesale; courses are left to the individual teacher, who knows best the conditions under which he works and the scope and limitations of his workshop and pupils. The book is suited admirably to meet the needs of teachers of metal-work, as well as those who are qualifying to teach this subject; we believe that it will be found to be a distinct advance on many of the books available at present, some of which bear the impress of the amateur.

Miscellaneous.

The Acts of the Apostles. Vol. i. Chapters i.-xvi. By Dr. Charles Knapp. xl+76 pp. (Murby's Smaller Scripture Manuals.) 1s.—This is an excellent little commentary, packed full of good matter without being

overloaded, and possessing a power of fascination rarely found in this type of book. The introduction is comprehensive and scholarly, yet simply written and teeming with interesting points. The numerous summaries, both in the introduction and at the headings of the various sections of the text are very well done. The text used is that of the A.V., all important R.V. readings being clearly given in heavy type in the footnotes. A map and two plans are included. The book is described as being up to the standard of the Junior Locals. It will take a student beyond this, and at the same time its interesting style should create a love for the subject. Dr. Knapp may be congratulated upon the all-round excellence of this book.

EDUCATIONAL BOOKS PUBLISHED DURING DECEMBER, 1914.

(Compiled from information provided by the Publishers.)

Modern Languages.

"La Maison aux Panonceaux." With 12 illustrations by H. M. Brock. By Lady Frazer. vi+68 pp. (Cambridge University Press.) 5s. net.

"A Manual of French Composition for Universities and the Higher Classes of Schools." By R. L. Graeme Ritchie and James M. Moore. x+276 pp. (Cambridge University Press.) 7s. 6d. net.

"Egyptian (Arabic) Self-Taught." By Capt. Thimm. Fourth edition. Revised by Major R. A. Marriott. 80 pp. (Marlborough.) Wrapper 2s.; cloth 2s. 6d.

"The Soldiers' Language Manual: English—French." By Ajax. 24 pp. (Marlborough.) Wrapper 3d.

Classics.

"Gaius Julius Cæsar Gallic War." Book III. Cambridge Elementary Classics. Illustrated. Edited by Dr. E. S. Shuckburgh. xiv+78 pp. (Cambridge University Press.) 1s. 6d.

"An Introduction to the Old Testament in Greek." By Dr. Henry B. Swete. Revised by Richard R. Ottley. With an appendix containing the Letter of Aristæas. Edited by H. St. J. Thackeray. xvi+626 pp. (Cambridge University Press.) 7s. 6d. net.

English: Grammar, Composition, Literature.

"Blackie's New Systematic English Readers." Book v. 264 pp. (Blackie.) 1s. 7d.

"The Golden Legend." Lives of the Saints Translated. By William Caxton. From the Latin of Jacobus de Voragine. Selected and edited by George V. O'Neill, S.J. viii+294 pp. (Cambridge University Press.) 3s. net.

"The Mystery of the Drood Family." By Montagu Saunders. xiv+160 pp. (Cambridge University Press.) 3s. net.

Shakespeare: "Merchant of Venice." (Junior edition.) By S. E. Goggin. xxiv+118 pp. (Clive.) 1s. 4d.

Chaucer: "Prioress Tale." By C. M. Drennan. 69 pp. (Clive.) 1s. 6d.

"Selected English. Selections from Shelley, Lamb, Goldsmith, Keats, Dryden, Scott, etc." With short biographies and notes. Edited and adapted from the text-books of the late Adele Ellis by Ray Phillips. 278 pp. (Macmillan.) 2s. 6d.

"American Literature for Secondary Schools." By W. B. Cairns. 358 pp. (Macmillan.) 4s. 6d. net.

"College Life: its Conditions and Problems." A Selection of Essays. Arranged and edited by M. G. Fulton. 548 pp. (Macmillan.) 5s. 6d. net.

History.

- "Social Life in Wales." By John Finnemore. (Black.) 1s. 6d.
- "Story of English Industry and Trade." By H. L. Burrows. 248 pp. (Black.) 1s. 6d.
- "Graphic Chart of English History." Size 40×19 in. By G. H. Reed. (Cambridge University Press.) Printed on stiff card, 2s. net; mounted on canvas and folded, 2s. 6d. net; mounted on canvas, varnished, with rollers, 3s. net.
- "Select English Historical Documents of the Ninth and Tenth Centuries." By F. E. Harmer. x+142 pp. (Cambridge University Press.) 6s. net.
- "The Origins of the War: Lectures Delivered in the Michaelmas Term, 1914." By Dr. J. Holland Rose. viii+202 pp. (Cambridge University Press.) Paper covers, 2s. net; cloth, 2s. 6d. net.
- "The Britannic Historical Geography." Part iii., embracing European History, 1600-1914. 24 pp. (Charles and Son.) 3s. net per dozen.

Geography.

- "Black's Travel Pictures." Edited by Robert J. Finch. (4) "British Isles." (5) "The Countries of the War." Each set contains 48 carefully selected pictures; 24 in colour from water-colours painted on the spot, and 24 in black and white from photographs. In special detachable file-portfolios, 10d. per set.
- "The Pupils' Class-Book of Geography: The British Dominions, with Reference to the Setting in which they Lie." By Ed. J. S. Lay. 128 pp. (Macmillan.) Sewed, 6d.; cloth, 7d.
- "Macmillan's Geographical Exercise Books." II., "Europe." With Questions. By B. C. Wallis. 48 pp. (Macmillan.) 6d.

Mathematics.

- "Blackie's Modern Business Arithmetic." By H. H. Talbot. 124 pp. (Blackie.) 1s.
- "The Cambridge Elementary Arithmetics." By J. H. Webster. Book V. (suitable for Standard V., with Answers). 92 pp. Book VI. (suitable for Standard VI., with Answers.) 102 pp. (Cambridge University Press.) Cloth, 8d. each; paper, 7d. each.
- "A Course of Pure Mathematics." By G. H. Hardy. xii+444 pp. (Cambridge University Press.) 12s. net.
- "Exercises in Arithmetic and Mensuration." By P. Abbott. (Longman's Modern Mathematical Series.) 3s. 6d. With Answers, 4s. 6d.

Science and Technology.

- "Inorganic Plant Poisons and Stimulants." By Dr. Winifred E. Brenchley. (Cambridge Agricultural Monographs.) x+110 pp. (Cambridge University Press.) 5s. net.
- Nature Reader Monthly (New Series):—"Round the Year, containing issues of Nature Reader Monthly for 1914." 32 pp. (Charles and Son.) 1d.
- "Bricks and Artificial Stones of Non-Plastic Materials." By A. B. Searle. 158 pp. (Churchill.) 8s. 6d. net.
- "The Chemistry of Cyanogen Compounds." By H. E. Williams. 432 pp. (Churchill.) 10s. 6d. net.
- First Book of Physiology and Hygiene. By Gertrude D. Cathcart. 166 pp. (Macmillan.) 1s. 6d.
- "A Class-Book of Chemistry." Parts i. and ii. By G. C. Donington. 278 pp. (Macmillan.) 2s. 6d.
- "Pottery for Artists, Craftsmen, and Teachers." By George J. Cox. 212 pp. (Macmillan.) 5s. 6d. net.
- "An Introduction to the Study of Fossils (Plants and Animals)." By H. W. Shimer. 466 pp. (Macmillan.) 10s. 6d. net.

Pedagogy.

- "The Education of Young Children in the East." By Alice E. Stephens. (Blackie's Pedagogic Library.) 108 pp. (Blackie.) 2s. net.
- "The School, the Child, and the Teacher: Suggestions for Students in Training." Written with special reference to the work in South African schools. By Ellen Winifred Adamson. (Longmans.) 4s. 6d.
- "The Industrial Training of the Girl." By W. A. McKeever. 94 pp. (Macmillan.) 2s. net.
- "Principles and Methods in Commercial Education." By J. Kahn and J. J. Klein. 456 pp. (Macmillan.) 6s. net.
- "Principles of Secondary Education." Written by a number of Specialists. Edited by Paul Monroe. 820 pp. (Macmillan.) 8s. net.
- "Dissenting Academies in England: Their Rise and Progress and their Place Among the Educational Systems of the Country." By Irene Parker. xii+168 pp. (Cambridge University Press.) 4s. net.
- "Statutes of the University of Cambridge, with the Interpretations of the Chancellor, and Some Acts of Parliament Relating to the University." Edited by the Registry of the University. xii+242 pp. (Cambridge University Press.) 3s. 6d.

Miscellaneous.

- "Oxford and Cambridge Schools Examination Board. The Portion of the Regulations (pp. 46-68 and pp. 86-90) Relating to the School Certificate for the Year 1915." 30 pp. (Cambridge University Press.) 3d.
- "Forty-First Annual Report of the Oxford and Cambridge Schools Examination Board for the Year ending October 31, 1914." 52 pp. (Cambridge University Press.) 1s. net.
- "Cambridge University Examination Papers, Michaelmas Term, 1913, to Easter Term, 1914." Vol. xliii. iv+1108 pp. (Cambridge University Press.) 31s. 6d. net.
- "Year Book Press Unison and Part Songs for Schools." No. 113, "Wood Anemones." (Two-part Song.) Composed by Charles Harford Lloyd. 8 pp. (The Year Book Press.) 3d.

CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising any article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.

Mathematics and Science as Part of a Liberal Education.

To Mr. Eggar's proposition (THE SCHOOL WORLD, January, 1915) that a liberal education should include mathematics and science, most of us will assent. For those subjects are well suited to the training of reasoning power, which alone enables us to attain consistency in our thoughts and actions. We Britishers fall far short of our French Allies in our regard for reason. They need only have some inconsistency in their laws pointed out to set them all to work to put their house in order, and so attain perfect consistency.

Others, however, place judgment above reason. Mathematics and science teach us how to draw the infallible conclusion from given premisses. But for

most human decisions the premisses are not provided cut and dry; the first step is usually to sort out from a mass of material the facts that bear on the problem and to assign to each its due weight. There is something to be said for the attitude of the Britisher who, when confronted with two inconsistent laws, will ask, before setting about to reform them, "Is there any harm in the inconsistency? How do the laws work as they stand?" The sorting and weighing necessary to a good judgment is not provided by the mathematico-scientific training, and we must join issue with Mr. Eggar when he suggests that this training is the one essential. The sorting and weighing being done in the main on human material, skill to do it well must be acquired by a training in humanistic studies, and these must be given a good place in the curriculum.

Then, again, the man who wishes to take an effective place among his fellows must be able to present his views and judgments convincingly in speech and writing. Few of us are so happily constituted that, as with Mr. Eggar, this skill comes by nature, without effort. It is true that this skill may be attained by a suitable treatment of mathematics and science; it is sad that this treatment is rarely adopted. It is true that it may be attained by a suitable study of the mother-tongue in and for itself, as is done with conspicuous success in France; it is sad that it is so little done in England. Here at present this linguistic skill can only be attained by the study of foreign languages, ancient or modern.

These studies, mathematico-scientific, human, and linguistic, are pursued in all self-respecting boys' schools, and we agree with Mr. Eggar that school examinations should test the first named. We hope he will agree with us that they should also test the second and third. At the university stage the case is different. The reason, judgment, and skill in language attained at school will remain when the facts used in the process have been forgotten. We must not require the grown man (unless he is a specialist in that branch) to remember his mathematico-scientific studies in order to give evidence of his reasoning power; we must examine him on his later studies, and let him show his reason or lack of it on them.

P. Q. R.

THE paper in question never suggested that mathematics and science should be the only test subjects. There must have been a failure either in "skill of presentation," or in "sorting and weighing."

W. D. E.

Practical Mathematics.

IN the issue of THE SCHOOL WORLD for December last (p. 480) Mr. Schwartz objects to methods which encourage the idea that drawings and measurements lend an empirical support to geometric propositions. Is not empirical support of some kind necessary, if the propositions relate to pure mathematics?

An experiment is superfluous only when it has been made before, and when there is no reason to suppose that repeating it would give a different result. A statement of an experimental result may be wrapped up in phrases, and be the conclusion reached by a process of unwrapping or "reasoning." The argument is then valid, but consists of a mere juggling with phrases. To confirm the conclusion by a trial is, essentially, to repeat an experiment already made, and therefore the new empirical support is unnecessary. Probably any statement of an experimental result, whether in mathematics, or some other branch of science, could be presented in a disguised form,

from which it could be obtained by stripping off the disguise.

It may, however, be doubted if a boy's experimental results are really contained (in the above sense) in the axioms which he finds in his school geometry. Possibly the axioms could be re-stated so that they would really have the practical applicability sometimes attributed to them, but, at present, should they not be regarded as belonging to pure or abstract mathematics? When they are re-clothed in a garment of terms supplied by the science of classification, the need of empirical support when we apply them to the geometry of everyday life becomes obvious, and ordinary practical mathematics is seen to be a branch of physics.

The kind of practical mathematics which might be expected to precede the usual course of theoretical geometry is probably never done in schools. It would consist in making acquaintance with the meaning of some fundamental terms of classification (such as *class*, *sub-class*, *order*, *correspondence*, *manifold*) through models of classifications constructed by the pupils.

It will perhaps be said that the ordinary school measurements and constructions might be regarded as providing an introduction to the fundamental ideas of classification, and that therefore special models are unnecessary. In this there is some truth, but, while historically pure mathematics sprang from such observations, yet, as a source of classificatory or "abstract" ideas, they are open to the objection that some results of experiment acquire thereby a misleading appearance of being fundamental to pure mathematics, and, that some important ideas of pure mathematics (such as spaces of more dimensions than three) do not readily find illustration.

C. ELLIOTT.

9th Battery, 3rd W. Riding R.F.A., Doncaster.

A New Version of Galileo's Abjuration.

THE following answer to the question, "What do you know about . . . Galileo . . . ?" helped to cheer the coming of Christmas for me. It runs parallel to the accepted story, although at a considerable distance from it.

"Galileo was a Spanish mathematician who said that the world was round. When he was tortured, he said that the world was not round, adding, under his breath, 'I don't think.'"

W. D. E.

The School World.

A Monthly Magazine of Educational Work and Progress.

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SIXPENCE.

THE TEACHING OF MATHEMATICS IN GIRLS' SECONDARY SCHOOLS.

By M. J. PARKER.

Senior Mathematical Mistress, St. Saviour's and
St. Olave's Grammar School, London, S.E.

IN approaching the subject of the teaching of mathematics in girls' schools it is pleasant to feel that one need no longer assume the attitude of championship, and prove that girls are worth teaching, but can pass on to the discussion of the curriculum which should be adopted in their schools. We can afford to smile at Lessing's bitter words, "That the woman who thinks is like the man who puts on rouge—ridiculous," and spend our time rather on the problem of the methods of making them think.

Mental sloth is the besetting sin of nine-tenths of the world. The average person would willingly go through any amount of routine to save the trouble of thinking. Now if the study of mathematics trains the faculties of comparison and reflection, if it gives strength and flexibility to the mind—as we may safely assume that it does—surely there is no question as to whether or not its salutary discipline should be extended to all our girls, and we should be chary of relaxing the study of a subject which makes us sit down and think.

The importance of theoretical geometry for the average girl cannot be over-estimated, for it gives her just that training in reasoning which she so greatly needs. It makes her less likely to jump to conclusions, less inclined to accept statements unsupported by proof, better able to weigh evidence; in short, it trains her judgment. Practical work and elementary algebra, though requiring rather less mental effort, teach the pupil to be careful and accurate, while more advanced algebra opens up fields for reflection which should prove of great value in the development of character. The first time, for instance, that a girl is intro-

duced to a curve which "goes off to infinity" will probably lead to a discussion upon the limitations of the human brain, the realisation of which tends to develop the virtue of humility—a virtue somewhat overlooked nowadays.

Unfortunately, however, as soon as the average girl has learnt to use her tools, her mathematical studies are cut short. Only a few are given the pleasure of using them in trigonometry, and fewer still have the opportunity of studying applied mathematics. The fact that the girls do not realise to what use those tools can be put, leads to that foolish question which we sometimes hear: "What is the use of mathematics?" How few people are aware that in navigation, architecture, astronomy, engineering, etc., little could be done without a knowledge of mathematics, nor could there exist many of the objects which they see and use every day. It is strange, indeed, that no stigma is attached to this kind of ignorance. The world holds up its hands in horror over ignorance of the text of Hamlet and Macbeth, but condones a lack of knowledge of the working of the common pump.

To return to the subject of mathematical teaching in schools. It is sometimes said that the average girl finds mathematics so difficult and uninteresting, that it scarcely seems worth while to teach her. Now my own experience is that the average girl does not find the subject excessively difficult; and, moreover, that even the girls who are not brilliant find much pleasure in the work. What joy it gives to the steady plodding girl to discover how to do a rider! The mistake is often made of expecting them to find the subject difficult, for if once the idea of difficulty is put into their minds many girls will not trouble to exert their intellects, and will be quite content not to rise above the expectations of their elders. But what of those girls who show no aptitude at all for mathematics? Should those girls be allowed to discontinue those studies? Every-

one is agreed that it is well for a girl to continue her arithmetic in face of all difficulties; but as regards other branches of mathematics there are divergences of opinion. My own conviction is that every girl in a secondary school should, if possible, at an early age have a course of practical geometry, in which she is taught the use of instruments and obtains clearer ideas of direction, area, and volume.

Elementary algebra can also be taught as generalised arithmetic so soon as the girl has grasped the corresponding ideas in arithmetic. Theoretical geometry can be begun when she is about twelve years old. Of course, there are girls who do not see that "things which are equal to the same thing are equal to one another," but happily such cases are not frequent. When they do occur the only thing to do is to follow the advice of an eminent educationist, and "write home to the parent and break the news as gently as possible." In such circumstances it is only torture to the pupil to endeavour to learn, and exceedingly wearying to the teacher, whose energies would be far better employed in some other direction. For all teaching depends upon a certain presentiment and preparation in the taught. But as all new ideas take time to soak in, the teacher must be exceedingly careful lest she excludes from the privilege of learning mathematics, girls to whom, with some patience on both sides, mathematical ideas would have come; hence it is advisable for all girls to continue their theoretical geometry for one year at least, and their algebra for two years, before they are allowed to discontinue the study. When these few girls have been weeded out, the rest of the class should continue geometry and algebra up to the stage of any university matriculation; in addition, the more promising should have a course on elementary trigonometry, and to all should be given an opportunity of becoming acquainted with the more elementary facts and ideas of applied mathematics.

The question arises as to whether mathematics should be compulsory for matriculation. I have no hesitation in answering in the affirmative. The girl who is not fit for matriculation mathematics is probably not fit for matriculation history or any other subject. It is true, of course, that there may be a few girls capable of doing good work in English, for instance, who, even after patient and steady work, would never pass in matriculation mathematics, but these cases are very rare, and for the sake of the few the rest should not be allowed to shirk the mental discipline which mathematics gives. Without some training in mathematics the development of her brain is one-sided, and she is not really in a position

profitably to continue her studies in other subjects at a university.

I suggested that all the girls should be given an introduction to applied mathematics. By that I do not mean the mechanics which at one time was compulsory for London matriculation, and caused such a stumbling-block to many girls, but just sufficient to open their minds to the fact that there is a very close connection between their mathematics and the machines which they see at work every day, and also to create interest, and make them more observant of the mechanical contrivances around them. Without training, the mechanical does not appeal to the girl's mind as it does to the boy's; this is partly because her home duties prevent her watching men and machines at work, and partly because she is by nature more interested in the human being than in the machine. Yet interest in this subject is very easily aroused; she responds at once to teaching, and the broadening of the mind which elementary applied mathematics gives is well worth some time spent upon it.

After the stage of matriculation I do not think that any mathematics should be compulsory, though the study of it should by no means be discouraged. By this time the girl may be allowed to choose her own studies, and if she has had some training in trigonometry, besides the benefit which she has derived from this more practical side of mathematics, she will, with the advice of her teachers, be the better able to decide whether she is fitted to continue the special study of mathematics.

Now in attempting to eradicate that unjust idea that because she is a girl she is unable to do mathematics, women educators have perhaps gone a little astray in confining their energies to guiding her along the lines already laid down for boys instead of working out for themselves the lines upon which a girl is best fitted to go. Our pioneers fought for equal opportunities, and the girls were obliged to prove their ability, and put to shame those who scoffed at the idea of girls doing mathematics at all. But now this time is over, and women are at liberty to take the matter into consideration, and investigations by both men and women may prove that the existing methods are by no means perfect. But the time has certainly not yet arrived when it would be wise to differentiate between the mathematics of boys and of girls in the elementary public examinations. The mathematical ideas aimed at should be the same, though the method of presentation may be different.

With regard to text-books, girls up to the present have worked at a disadvantage. The standard books have been written chiefly for

boys by men; the consequence is that we have questions and examples, within the scope of the interests of the boys and practically none of special interest to the girls. I take at random four consecutive questions from a well-known arithmetic. They begin: (1) Three boys begin to fill a cistern; (2) three men are employed to dig an acre of ground; (3) four men and ten boys together do one-half of a piece of work; (4) three men run a mile race. It is time that a man and a woman teacher of mathematics together brought out some standard books which would include examples of interest to the girl, and at the same time would help to widen the boy's outlook. They might contain examples derived from the motion of the sewing-machine, combinations on the purl and plain of knitting, geometrical progressions, on the weights of a baby at different ages; some idea of area could be given by examples from cutting out material for the needlework lesson, some examples of stocks could be obtained from small sums invested in consols through the Post Office, for the idea that any girl could ever earn enough to save £4,000 to buy rubber, or any other shares, is so remote from the possibility of the experience of the average secondary-school girl that she does not attempt really to grasp what it means. Calculations on the premiums necessary to obtain a pension at fifty-five years of age (not sixty) would also be within the limits of possible experience.

For boys and girls alike our aim should be to give them mathematical ideas which they could apply to any branch of the subject which they might afterwards take up. After all, it is the ideas that matter, and if the right ideas are given they will be the same for the girl as for the boy. The mental equipment of the girl is different from, not inferior to, that of the boy; hence the branches of mathematics which she may be best fitted to take up afterwards may be different. The mathematics required for the construction of instruments used solely for the destruction of other human beings, however necessary in this imperfect world, do not, and should not, appeal to her; she would probably be more interested in those branches of mathematics required for architecture which would enable her to plan her own home and supervise the construction of it. She should have a training in mathematics which would enable her to devise or use labour-saving instruments to the best advantage or guide others to do so. No girl should pass through a secondary school without acquiring a sufficient grasp of mathematics to enable her, when thrown upon the world, to invest her own savings. It is astonishing how few, even among well-educated women,

are sufficiently trained to be able, for instance, to take out a policy for a pension, without relying on an insurance company's agent.

But we must beware of in any way limiting the outlook of the girl, for surely one of her chief needs is breadth of view. Those of us who have had the benefit of a modern education owe to our pioneers a debt which we can never pay, and we should be utterly unworthy of them if we allowed for one minute that to be lost for which they fought. The girl who is made to give up mathematics or any other subject that makes her think, and take up cookery and needlework, because they will be more useful to her in her home, may be able to cook better directly she leaves school, but the girl who continues in her broad school course will in time be a better cook because she has a trained judgment. Happily in these days we have not to take up the cudgels on behalf of the educated girl, for it has been amply proved that a knowledge of mathematics and Latin grammar is not incompatible with a turn for housekeeping, but rather the reverse; however, we must still be on our guard lest in our anxiety to present to the girls of our schools such subjects as are best suited to them, we relax the study of one upon which we are daily discovering that all the sciences more and more depend, and one which even enters into art. What study could better equip a girl for the clear understanding of any other branches of knowledge than the study of so fundamental a subject as mathematics?

CONTINUATION SCHOOLS AND THE TRAINING OF ENGINEERS.

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THE function of continuation schools in providing vocational training for all trades and professions needs close attention at the present time, both from teachers and employers in the various trades, as there is evidently a sufficient body of public opinion to support any movement which promises success. The recent defeat of compulsory legislation was probably due to the absence of any general plan more than to the obvious lack of schools, equipment, teachers, or curricula for carrying it out. The national expenditure in war will cripple for some time the resources which can be allotted to this purpose, but the inevitable relapse in business will make it only more apparent that every effort must be made to secure efficiency and avoid loss of time, effort, and money in working out on a large scale any wrongly conceived plan.

German and American experiments will be highly instructive, but the best plan for England will not be a copy of these, but one adapted to our own practice and traditions. We must work out our own salvation. This rule holds good to some extent, not only between one nation and another, but between one trade and another in the same State, and even between one firm and another in the same trade or district. The suggestions here put forward relate to the engineering trade, but may stimulate experiment in other directions and thus furnish material for a general advance on safe lines in the future national development of vocational training.

APPRENTICESHIP.

The decay of definite apprenticeship training is not due to a diminution of zeal on the part of employers or employees, nor to the gradual removal of any need for training, but to the absence of sufficient adjustment in the method of apprenticeship to the changed conditions which now obtain. It is beside the point to bewail the past or decry the present; what is needed is a careful study of conditions, and from this to devise a scheme of training suitable for to-day and containing the germ of adaptability to the future, so that no general breakdown will occur again.

The infinite subdivision of labour, the progress of standardisation of processes and product, and the displacement of skilled workers in any given operation by more accurate and delicate machines, characterise a movement that has the inevitability of a natural law, but these together do not remove the need for some skilled work such as can only be got by some kind of apprenticeship training. On the contrary, the number of skilled workers will continue to increase, though the proportion of such to relatively unskilled workers may decrease, while the *need* for such skilled workers increases in inverse proportion to the respective numbers of these two classes. Not only does accurate, delicate, and intricate machinery call for greater skill in the design and manufacture, but as the operator of several automatic or semi-automatic machines requires a less general training, so does the need for a man of greater knowledge and experience become more insistent to adjust and repair such machines. When nearly every machine required a trained man to operate it, this man could do the necessary adjustment or minor repairs. It may therefore be safely assumed that apprenticeship is still essential in engineering, but it must be different in many ways from that which grew up under the conditions of the trade guild.

This question of the adaptation of apprenticeship must be considered in two parts—first, the careful analysis of the trade itself, to see what classes of apprentices are required; and secondly, how the continuation school should be equipped and run in order to provide the kind of training which each class needs, but cannot get, in the best way in the workshop or office. We must frankly recognise that a modern workshop does not exist to train apprentices, but to furnish its product in the most efficient way in face of competition, and can sacrifice this main object only to a limited extent for the future good of the employee or of the whole trade. On the other hand, the school, supported by the general purse, must take as its main function the provision of whatever elements are required, but not adequately provided, in the workshop; it must be content to take the subsidiary part—what is left—and restore its self-respect by treating its purpose from a loftier point of view.

The two together form one unit, and by proper combination meet the immediate and material needs as well as those more distant and inspiring. The dual and apparently antagonistic aspect is illustrated again in the need for co-operation of employers and trades unions, and some means must be found for making their views complementary rather than hostile. Perhaps there is no class more in need of technical training than employers' sons destined to control established businesses; it is certainly a small part of the definite activity of trades unions to help in the proper training of their applicants for membership.

The first task, then, is the analysis of the workers required in engineering, and apprentices may be considered as of three classes—to provide engineers, tradesmen or operators, and clerical staff, and the training should aim chiefly at developing respectively technical or administrative ability, manual skill, and literary or commercial judgment. The work of all these is not sharply divided, and the function of any one may combine with, or shade off into, that of one or more of the other classes; but individual differences and experiences will adapt a man's training to the complexities of his duties if his character and ability has been rightly judged at a period early enough to decide which of the three classes he should best join. The schemes should have enough elasticity to permit a transfer from one class to another in case of exceptional development, but the best safeguard will be to delay the formal signing of agreements until each boy is at least sixteen years old. By this time a boy who left the elementary school at fourteen has had two years at the continuation school, and can be

judged, so far as intellectual power and desire for study are concerned, along with the boy who has remained at the secondary school until sixteen.

By this time the candidates for engineering or clerical apprenticeship should be somewhere near the standard of a university matriculation examination, at any rate in mathematics or literary subjects. On the other hand, the active "motor" boy should have got beyond errands and sweeping up the shop to show his powers of hand and eye in working some machine, and thus he becomes worthy of apprenticeship as a tradesman or operator. The proportion of highly-skilled work in each shop will decide the relative numbers of these two subdivisions, and careful records of work done in the shops will show which individuals deserve transfer to the various departments, according to the skill acquired. Very close supervision is required to prevent a youth who is a successful machine operator being kept at a job he can do really well, since any change will mean a temporary loss in production for the department which transfers the boy.

The only really effective lever is the actual record of work, such as is obtained from bonus earnings in jobs which have been set after accurate time study. In face of such a proof, no head of a department will stand in the way of a transfer of a good worker to a better job, or to one which will complete the training. The formal apprenticeship will also prepare the minds of all for this transfer, and make it a matter of routine for the head of the department, while the apprentice has the stimulus of earning his promotion. Such apprentices should spend a great part of their time in some trade such as turning, with six months or so at some allied work and at fitting. The function of the continuation school for tradesmen and clerical apprentices can best be treated later.

The technical training of the "engineer" apprentice is fairly met by all the larger technical schools, and such apprentices are very considerably eased in their double work in the shop and class-rooms by the growing system of day classes or "sandwich courses." The latter have been tried on the north-east coast, and have many points of advantage. The student has matriculated and spends the six winter months entirely in his university course and the six summer months in the shops. Thus the student does not have to contend with early workshop hours and occasional overtime, followed by evening classes or homework. The employer does not have idle machines in working hours or irritating transfers to make for short periods to avoid the

upset in the production of one or more departments. All central technical schools of university rank should adopt the "sandwich" scheme of work.

The clerical apprentice should be prepared for the better posts which deal with the correspondence, shipping, statistics, or money transactions in engineering, and be moved at regular intervals into the required sections of the office departments, so as to get a general knowledge of the business, but the chief part of the time should be spent in that section for which they display most aptitude. The latter part of their studies should approximate to that given in a university course for a degree in commerce, rather than that which is mainly concerned with shorthand and book-keeping. Typewriting should be left entirely to girls. Since all their work relates to engineering, it is essential that they should have some practical experience of the materials, machines, and operations in the workshop. Hence, the continuation school or branch technical school should be fitted with machines on which they can gain some fundamental knowledge of this kind. They do not need a full training in the workshop, or to develop a high degree of skill, but they do want to be able to read drawings, to deal with routine problems, and to sort out those which must be dealt with by the technical staff, or to write letters which show some appreciation of the practical difficulties in carrying out a contract. Most boys of fourteen to seventeen enjoy this machine work, and the ideal course for the clerical and tradesman apprentices will recognise this. In these practical classes, too, we see an opportunity for the boys who have been forced by poverty, or have drifted through lack of direction, into blind-alley occupations, to show their credentials for entry into a regular trade.

Thus it seems that there is scope for a great increase in apprenticeship; in fact, the majority of boys employed by engineering firms should be definitely bound by legal contracts. The formal recognition by the employer gives self-respect and an assured future to earnest and capable boys. Parents of the best class are attracted by the scheme, and all parties are making efforts and sacrifices for their mutual well-being.

Two essential conditions must be exacted. First, there should be no premium required, but a deposit should be paid; and, secondly, the wages should be sufficient for maintenance. Merit must be the controlling feature, and not the ability of a parent to pay down a large premium, which undermines the claim for punctual, efficient work on the part of the apprentice, weakens the hand, and confuses the issue for an employer in dealing with laxity

or inefficiency, and places the foreman in a false position with respect to one who should be *in statu pupilaris*. A deposit, on the other hand, can be adjusted in amount to check hasty resignation, to create the feeling of sacrifice on the part of the parent, of responsibility of the boy to his father, and to be an investment worth attainment at the end of the training. In cases of extreme poverty, where a lump sum is beyond the parents' means, the amount can not only be reduced, but can be made up by weekly stoppage from the wages without injury to the self-respect of the boy.

CONTINUATION SCHOOLS OR BRANCH TECHNICAL SCHOOLS.

Schools of this kind for boys of fourteen to seventeen engaged in engineering need an almost complete reorganisation in order to fit them for the work they can best do. They must have machines enough for every boy to get the necessary first-hand knowledge of the materials and processes on which his future depends, whether that future is to be in the office or workshops. The curriculum should be the same for tradesmen and clerical apprentices of this age, and the time-table should be so arranged that the machines are occupied continuously by different shifts of boys on each evening of the week, in order that the equipment may be kept at a minimum for original outlay and until the supply of instructors on this subject is increased in number. The cost of machines need not be great, for the best kind of machine is of a simple and old-fashioned type that can be obtained by gift from interested employers, or by purchase second-hand.

It is quite a mistake to suppose that lathes for boys to learn upon must be fitted with the latest improvements, which are specially designed to increase the speed of production and to reduce the amount of understanding necessary to the workman who operates them. Such improved machinery has its place in the central technical schools of university rank, as the students should be in a position to appreciate the development and significance they carry, but it quite out of place in branch schools for younger students who will sooner grasp the principle in its simplest form. Then again, in an engineering centre like Manchester and Salford, if one branch school were fitted up as an experiment, the work would gain in serious value to the students and teachers by building some simple machine for a second school—the drawings and patterns could be made, castings ordered, parts made, and the time and cost kept, just as in a business firm. This has been done with great success in the Trade School at Worcester,

U.S.A. Such school-work touches the very heart of the problem of making our technical schools a real training for life and character. It is the seclusion from actual industrial conditions, and not merely its financial aspect for boys and parents, that is the great argument against the whole-time trade schools.

The rest of the curriculum is subservient to this practical work, and consists of practical mathematics and mechanics, workshop drawing, and English literature. A maximum of two hours on three evenings a week should be allotted as follows:—

1	evening	to machine work
"	"	drawing "
"	"	mathematics and English.

but the classes should be duplicated, if necessary, for those who do their machine work on the evenings first given to drawing, mathematics, and English.

The tradesmen apprentices and any blind-alley workers will find in the machine-work their opportunity to qualify for better work than their daily occupation furnishes, and the school reports and samples of work done there would be received as evidence of this from any applicant for employment or transfer. Every effort for reform should be directed to provide this machine-work for all students while they are young and in the branch schools. At present it is limited to a few older students in the large central schools. The drawing should aim at teaching these young students to read drawings rather than make them, and the exercises should be mainly free-hand sketches which can be done at home without the fixed apparatus of a drawing office. It should be kept in touch with business by being based upon spare copies of blue-prints and working drawings presented by local employers.

The English lesson should be a study of literature rather than of commercial correspondence, not from its recreative character merely, but because of its greater value as a means of mental training and its wider sphere of usefulness. The power to give telling, precise, "fool-proof" instructions in speech or writing, the imagination and understanding required to grasp the real purport of the spoken or written word of another, frequently decide the range of promotion of a skilled employee to foreman or to technical correspondent and administrator. The value of sound English is at its minimum only when the material can be dealt with, or the process repeated, in the presence of the person concerned, and this limitation is frequently a measure of the importance of the position of the expounder.

COMPULSORY LEGISLATION.

Compulsory legislation with regard to continuation schools would be futile until accommodation exists, and it is not called for until experiment has decided on the best means of vocational training; nor is it wise until the field of voluntary attendance has been exhausted. England was a pioneer in the foundation of Sunday schools, ragged schools, and voluntary schools generally, and the immense growth of evening continuation classes shows how widespread is the zeal for improvement among the younger generation, and among parents of the better sort; but it is pathetic to see how much of this effort is lost through the lack of grasp of necessary conditions.

Again, many employers are quite ready to support some scheme of instruction during working hours for the better part of their young employees. The whole-day classes for apprentices in certain districts have been successful through the co-operation of education committees and employers, but for office employees an hour or two at the beginning or end of certain mornings or afternoons in each week would meet the needs of business much better. In the case of typists a certain proportion could be spared for the first two hours each day. The girls could begin school half-an-hour before business hours, get two hours of instruction, and then have half-an-hour to get to business.

Employers both at home and abroad have found the value of special classes of instruction to their employees in business hours. These have frequently taken the form of lectures by specialists, or heads of departments, on the work and difficulties of their branch of the business. This is a form of instruction which is complementary to the more general work of schools, and should be limited accordingly.

The provision of regular schools inside a business organisation is not to be commended. This is not the function of a business house, but of the local education committee, and it is commendable only when the latter is unmindful of its duty. What is needed is the co-operation of these forces to secure by careful inquiry the conditions to be met, sufficient experiment to test the truth of any scheme under the favourable conditions of voluntary attendance, and from this to create a sufficient body of public support for a national scheme on compulsory lines, and it is the purpose of the suggestions made above to start such an experiment with respect to continuation schools and engineering apprenticeship.

EXPERIMENTAL AGRICULTURE IN RURAL SECONDARY SCHOOLS.

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THE rural secondary school, whether by choice or compulsion, has incorporated into its curriculum what is called "agricultural science," "rural science," or whatever name may be applied to that branch of science which has for its subject-matter the methods and principles of agricultural practice. I will endeavour to point out and comment briefly upon some of the outstanding difficulties which confront the teacher of this subject in so far as they affect the rural secondary school.

Any science scheme, if it is to be worked on so-called "modern lines," must be experimental and inductive; "observation" must precede "fact." A rural science scheme demands, therefore, that the pupils should not only be taught the principles of cultivation, of plant-growth and nutrition, etc., but that these principles must be practically demonstrated. And just as an empty laboratory would be of no practical use for a course in chemistry, even so would a course in rural science be reckoned of little instructive value without experimental "plots" upon which the principles of cultivation, manuring, etc., could be observed and grasped by the pupil. For this reason "plot-work" takes its legitimate position as a subject in the time-table of the rural school.

So far so good: and were it not for such obstacles to success as inclement weather and heavy soils, not to mention many others, plot-work might be undertaken with the monotonous regularity which the official requirements demand. A little thought makes it evident that a strict adherence to a time-table is impossible. On two or three occasions during the last three months there has been a complete stoppage of work for a week or more on the plots for which I am responsible, owing to continuous wet weather. It naturally follows that the work will get behind-hand, and that during a spell of fine weather the time-table must be sacrificed to some extent to meet the exigencies of the situation. The only other alternative, if the work is to be done thoroughly and not superficially, is "overtime" on the part of the boys and master, unless the school finances can supply enough "paid" labour.

The question of labour is the crux of the problem. There is no limit to the scope of the work in practical agriculture, given the time and the labour. I would have my readers bear in mind that I am not alluding to so-

called "school gardening." This may easily mean merely a series of isolated demonstrations of growth. Fundamental subjects such as the rotation of crops, soil amelioration, the principles of plant breeding, plant disease, etc., may be completely ignored, and these omissions may have no apparent detrimental effect upon the "school garden" as such. I am endeavouring to meet this danger.

The plots which I control are subdivided as follows, the total area being approximately three-quarters of an acre :

- (1) Rotation section.
- (2) Market-garden section.
- (3) Fruit section.
- (4) Nursery beds, small demonstration plots, plant-breeding enclosure, etc.

The rotation section is subdivided into four equal sections, and the following four-course shift is being attempted :—

- (1) Leguminous crop—beans, clover, etc.
- (2) Wheat.
- (3) Root crop—mangolds, swedes, potatoes.
- (4) Oats, or barley.

These four sections are roughly 30 ft. square. A short account of the work that has been done on the plots during the autumn term, 1914, may be of interest, and will also indicate in some degree the difficulties which have to be faced.

At the beginning of the term the harvesting of corn, mangolds, potatoes, fruit, etc., was carried out. The mangold crop had been subjected to special manurial treatment. The roots were nulled, cleaned, topped, and weighed. Rain intervened and stopped operations for more than a week.

Having cleared the mangolds, we then set to work on the bean and barley stubble in preparation for autumn wheat and winter beans respectively.

The wheat was drilled on October 10th—one small section was devoted to the growth of certain well-known varieties, including Square-head Master, Red Marvel, Little Joss, and others. The clearing of the bean stubble provided suitably easy work for the smaller boys. The application of dung and the digging was done by the seniors. This digging was real "hard graft." The man who is occasionally employed on the plots was ill at the time, and so the work of preparing the seed-bed was attempted by the boys alone.

The soil is a very heavy clay loam which sets hard, and after a prolonged drought it consisted of absolutely solid boulders, and it was quite beyond the strength of an ordinary fourteen-year-old boy to deal with it properly.

Fortunately, however, winter wheat requires no particularly fine tilth for its seed-bed, and rain which fell shortly before we drilled,

softened the hard lumpy soil. But in any case actual efficiency of work must occasionally be sacrificed on school plots, and it would be just as uncharitable for a farmer to judge the work on this wheat section from his own expert point of view, as it would be for the professional accountant to criticise severely a schoolboy's book-keeping exercises.

The wheat seedlings have been badly nibbled by rabbits, and I have laid three wires with no success. The beans were put in late—in the middle of November. The corn stubble was ploughed through the kindness of one of the governors of the school, but I am afraid "twitching" operations were very imperfectly done, as no harrow was available. Besides, by waiting even for a day or two, I was running the risk of rain coming and preventing me from getting the beans in at all.

Having completed our two autumn seedings, operations of various kinds kept us busy. Paths needed attention, the soil around the gooseberries and currants was lightly stirred, land was trenched and dunged for potatoes, young apple-trees were transplanted, young trees required staking, and so on. We are hoping to receive a visit from the "pruner" engaged by the County Council, and the boys will receive the benefit of his demonstrations for a day or two. I purposely kept back the pruning for his visit, which we expected at the beginning of this term.

In the manual instruction classes held on Saturday mornings the boys are constructing notice-boards, dibbers, stakes, mending broken implements, and doing other jobs which assist the plotwork. Two hundred cabbage plants were planted early in October, but in spite of wire fencing every plant when well established was eaten by rabbits. Thus it will be seen that the main object has been to carry out, so far as is possible, a course of work based upon the ordinary farm routine for the autumn months.

The plotwork during the spring and summer months will be based upon a similar policy. The more definitely experimental part of the work will be developed and enlarged upon according to time and opportunity. One part of the wheat section was liberally dunged, the other part received no dung. Later on it will be further subdivided and differentiated, each subdivision receiving a certain distinct manurial treatment. This will serve the purpose of introducing the subject of artificial manures, their composition, application, and action.

This reminds me of one other of the outstanding difficulties which hinder the efficacy of the work. The majority of the boys come

from the elementary schools. As a rule, they come to us two years too late. The elementary schoolmaster may be reluctant to lose his best boys, and so they stay on too long. A boy of fourteen has not been accustomed to a system entailing much individual effort in his free time, and it takes him some time to get used to his new surroundings. Often-times he is grouped with boys much younger than himself owing to his ignorance of Latin, algebra, and other subjects in the school curriculum.

Not only do they begin too late, but few of these boys remain at school after they are sixteen, so that any results have to be produced in two years. This makes it clear that only a most elementary course in agriculture is at all possible. Besides, the mental training of these boys has been neglected. They have received little in the way of individual treatment. They lack initiative and work mechanically. They have been taught to memorise, but their reasoning faculties have been undeveloped. If they came to us at the age of eleven there would be time to remedy this, and afterwards the bright boy would make rapid progress. So that, although courses in agricultural chemistry and agricultural biology would be highly interesting and instructive, few boys, for these various reasons, are ever able to take advantage of them.

Again, I fail to see how the modern inductive method of science teaching can be applied to agriculture. The effect of surface tillage on the growth of the cabbage crop, for instance, may take months to become evident. Experiment, followed by observation and the drawing of the logical inference, is an admirable plan of operation, but I do not see how it can be applied in this case. You may hurry a chemical reaction, but nature takes her own time. The consequence is that, unless a course of theoretical instruction upon the principles of agricultural practice be included in the scheme, the work on the experimental plots may be very imperfectly understood by the average boy. But with a small staff and an already overcrowded curriculum, it is difficult to see how provision can be made for this instruction unless it be included in the scope of some other subject.

It is a remarkable fact that the school called upon to carry out such an ambitious scheme should be, in most cases, the smaller country grammar school. The larger county schools or grammar schools, situated in the centre of our agricultural districts, which are not handicapped by a small staff, satisfy the educational authorities with a scheme which has merely an agricultural bias. Apart from the

science subjects, I am responsible for various so-called "subsidiary" subjects throughout the school. I give instruction in chemistry and biology to the senior forms, and there are introductory courses in nature study and experimental science for the juniors. The total time allowed me for work on the plots is $4\frac{1}{2}$ hours per week.

We have the occasional assistance of a labourer, but otherwise the boys and myself do the manual work necessary. Personally I have no objection to these "subsidiary" subjects—they introduce an enjoyable spice of variety—but it is evident that the science scheme alone provides ample work for one teacher, and all his time, energy, and intelligence ought to be given up to it.

Another point for consideration is the attitude of parents towards the work on the plots. In many cases there is a certain prejudice against it, and in some cases a most decided objection. There is a mistaken idea in some cases that work on the land is for the poor or the ignorant, and that a boy, by working on the plots, is injuring his status as a "grammar-school" boy by so doing—to them it means nothing but the sweated brow and the muddied boot. They endure with equanimity the martyrdom of the dull boy in being compelled to spend weary and unprofitable hours over the present indicatives of *amo* and *donner*, but they very decidedly object to his being asked to work on the land for an hour or less per week. We have also to meet this point of view—"My boy is going into a bank, so what is the use of this plot-work to him?" If only boys who intend to take up farming or horticulture were employed on the plots it would be impossible to carry on the scheme, as, comparatively speaking, a very small percentage of the boys go back to the land. The grammar school in many instances is looked upon rather as a means of getting off the land and into the office.

The rural schools have done their part in taking up a venturesome scheme, possibly suffering financially and in other ways by so doing, and it remains for the authorities to provide for an end in view. There should undoubtedly be a much closer connection between the rural secondary school and the agricultural college than at present exists. It would be to their mutual advantage if scholarships at these colleges were open for competition among pupils from these schools.

The rural-school curriculum has been revolutionised, but the future career of the boy has received little or no consideration. As it is, the most promising boys after a time forsake the agricultural work, since it offers

them no prospects. A few months ago, the secretary for education for one of the counties informed me that he had been trying for some time, without success, to get a man who was qualified for the post of travelling instructor in fruit culture.

It must be emphasised that farming and higher education are not incompatible, and there is no reason why the promising son of a small farmer or fruit grower should not be given the opportunity of becoming "expert" in that particular branch of work with which from childhood he has had intimate acquaintance. Nowadays, such a type of youth drifts into a bank or into the teaching profession, or into some other sphere which is alien to his natural proclivities. Taking everything into consideration, therefore, it remains to be seen whether an agricultural science scheme can be thoroughly carried out in the smaller rural schools. The general principle is admirable, but its practical application is quite another matter.

Factors for success are, in my opinion, these—an adequate staff, sympathetic interest and forbearance on the part of the education authorities, and facilities to be provided for boys who wish to prosecute their agricultural studies on leaving school.

In spite of the many difficulties and shortcomings to which I have referred, the rural school authorities, which have so bravely faced them, have much on which to congratulate themselves. They are the pioneers of a new order of things. Secondary education in rural districts has now an intimate connection with the everyday affairs of country life. The lad who rises with the lark to put in a good hour's work before school on the land or in the homestead, brings his experiences with him into the class-room—no longer subjects to be tabooed but to be discussed intelligently and sympathetically. The fruits of the hedgerow, the weeds of the wayside, work in the garden or field, have now a close association with his school life. The "grammar school" no longer suggests nothing but the Sunday suit and unnatural tricks of speech, but provides an environment in which he feels at home.

Herbert Strang's Readers in Five Grades. 96 pp. each. (Oxford University Press.) 6d. each.—Mr. Strang's library now numbers some thirty volumes; but these readers are apart from the little red books. The names of the readers are, "The Golden Gate," "The Boy who would not Learn," "The Story of Joan of Arc," "The Story of Napoleon," and "A Prisoner in Spain." The books are all illustrated and are of the very convenient quarto size; the type is particularly black and clear.

THE DIRECT METHOD AGAIN.

By F. A. HEDGCOCK, D.-ES.-L., M.A.

FOR some time past it has been evident that some of our modern language teachers wish to revolt against the direct method. In more than one article we have been told lately that the method is not a perfect success, that much of the older translation system was good, that the newer method has not fulfilled the great promises made in its name. The general conclusion of these criticisms may be summed up in a phrase taken from an article in the October, 1914, issue of *THE SCHOOL WORLD*:¹ "Let every teacher feel free to develop his own method," i.e. let us return to anarchy and throw off the shackles of any system whatsoever.

It seems curious that the direct method which has given such good results on the continent, and which continental teachers (although they may have modified it in some slight respects) have no intention of abandoning, should thus be declared bankrupt in England. However, accepting for the moment the assertion that the system has not given good results in England, I propose briefly to examine why this is. But I should like to begin by exposing a few fallacies in these attacks as exemplified in the article to which I have already referred.

Now it certainly was the intention of the reformers to create in the pupil's mind as direct an association as possible between the foreign words and the ideas they connote—that is the main principle of the method. But though the child was thus "to learn to speak the language (*within certain limits, of course*) by dint of habit," and thus to acquire correct speech, it was never claimed by any reformer that I know of that he could thus *insensibly* pass "to correct writing." Teachers who imagine that that is possible are demanding from their pupils more than is asked of a child in using its mother tongue. A little French boy of four or five is quite capable of saying to his mother, "*Où sont les lettres que papa a reçues ce matin?*" but it is, of course, highly improbable that he could write the sentence correctly. The rules of French grammar, like those of German, have to be learnt with considerable trouble even by little Germans and Frenchmen. French boys of twelve would, for instance, be quite capable of writing the above phrase incorrectly. Do not let us then imagine that by any system we shall get rid of the necessity for teaching grammar.

As a matter of fact, "direct methodists"

¹ "The Direct Method." By S. R. Richards, M.A. All my quotations are taken from this article.

have never made any such foolish claim. What they have said is that the language comes *before* the grammar, and that grammar rules should be deduced (and then learnt) from the language. For example, instead of teaching boys a rule that "adverbs of quantity take *de* after them," and then giving them translation exercises on that rule, the direct methodists ask that the boys should be habituated to phrases such as, "*J'ai beaucoup de pain; nous avons assez d'argent; ils ont trop d'encre,*" etc., before they are asked to deduce any rule. Evidently in this particular case, if they are quite used to employing the correct formula, they will never need to learn a rule—the need for a rule only comes in *if* you translate; it is, indeed, a rule in *comparative* grammar.

Or, to take a more complicated point—the use of the disjunctive personal pronouns. When your pupil is used to saying (a) *Je viens avec vous; il va avec elle*, etc.; (b) *C'est moi; c'est elle*, etc.; (c) *Qui est là? Moi*, etc.; (d) *Louise est plus jeune qu'elle*, etc., it will be comparatively easy to make for him a table of the uses of these pronouns, which he can learn if need be and which may include those rarer cases which he has not so far met with. Of course, he may still answer incompletely some such question as, What are the uses of the disjunctive pronouns? because he may fail to recall all the possible cases. But I suppose that most teachers will admit that if he can employ correctly any he may need to employ, that is sufficient; and to that correct use, only *use* and no mere learning of rules can habituate him.

Grammar then will be deduced from the language and learnt as needed, not acquired in advance of actual needs by memory work.

Next as to vocabulary and general facility in employing the foreign language. "The greatest fallacy," we are told, "seems to be that of assuming that the natural process of acquiring one's own mother-tongue is the one to be employed in learning a foreign language under artificial conditions." Obviously; but no one supposes that the pupil in the class-room is going to employ an entirely "natural process" for acquiring a foreign tongue. The teacher, by choosing the subject of the lesson and the words to use, employs a *concentrated* process, which by its concentration is to make up for the shortness of the time at his disposal; but if he is a direct methodist, he will not confuse the method and make it more difficult by introducing a second language (that of the pupils) and by forcing their brains to skip continually from one to the other. Were the teacher to employ a perfectly "natural" process, he would go into his class-room without any pre-

liminary thought as to the subject to be treated in the lesson and the words to be introduced; he would then chat about the subject and let his pupils pick up what they could. But in such a case he cannot expect his pupils to profit by his chat if they are not yet sufficiently used to the sounds of the language, if they have not yet a sufficient vocabulary from which to infer the meaning of new words and a sufficient power of asking questions.

Here then, as elsewhere in all good teaching, selection, order, and concentration are necessary.

Next, I should like to say a word as to the time we can give to modern language teaching in our schools and the results we may hope to attain. "A boy of ten," we are told, "has for eight years spent every minute that he was awake in striving to master his mother-tongue." This assertion shows that it is not only reformers who exaggerate. I meet constantly boys of ten and older who give quite a few minutes a day to other things, and who seem to strive very little indeed for a mastery of their mother-tongue. Once a child has learned to speak he soon picks up a few formulas and a small vocabulary sufficient to express his own simple ideas and his own simple needs. And that stock increases quite slowly. It is only by degrees and, usually, thanks to the painful efforts of his teachers, that he acquires any mastery of his mother-tongue. Keeping in mind, then, the little thought and time that a boy of ten gives to the subject, and the extremely limited power he achieves, let us not despair of attaining something approaching the same level by a course of well-selected, concentrated efforts; but, at the same time, do not let us expect too much from our pupils. If, as we are told, a young native has "a very limited power of expression," a "very restricted vocabulary," and "an extremely crude and faulty manner of writing," we evidently cannot expect sudden perfection from our own learners of a foreign language. For my part, I would not care twopence if an English boy of thirteen or fourteen could or could not translate a page of "Sans Famille" or "Le Roi des Montagnes" (and we all know how much they like to "turn up" words and how often they guess others); but I do say that if at that age, and after three or four years' French teaching, a boy cannot use, say, *il y a* in any form necessary, ask and reply to simple questions, and use the names (with correct genders) of the ordinary objects of everyday life, he has wasted his time. I have examined candidates for matriculation, boys and girls of sixteen and above who, to my question, "*Comment vous appelez-vous?*" replied, "*Très bien, merci, monsieur*"; when,

indicating the door, I said, "*Fermez la porte, s'il vous plait*," they shook me warmly by my extended hand, exclaiming, "*Bonjour, monsieur*"; and when, pointing to the objects, I asked them the French for the ceiling, the floor, a glass, a water-bottle, and a hand-bag, in a large number of cases they remained silent. Such results from several years' teaching are appalling. I venture to add that with two or three years of *direct method*, properly carried out, they would be impossible.

To represent the *direct method* as a way of "learning a language by speaking it," and not mentioning choice of words and phrases, deduction of grammar rules from examples met with, etc., is a wicked parody of an excellent thing. The *direct method* means a careful building up of knowledge from small beginnings, by painstaking order and infinite patience. It is an art, to be acquired carefully and used delicately, whereas for the so-called "translation method" the teacher needs nothing but some knowledge of the foreign words. Above all, it does *not* mean (and I earnestly warn all teachers who are trying "to develop their own method" along reform lines not to fall into this fatal error), it does *not* mean teaching our pupils "first, to read; and secondly, to speak." Supposing you catch your pupils reasonably young, say between ten and twelve (and for older pupils the method must obviously be somewhat modified), they will almost certainly still have that priceless blessing for the acquirement of a foreign tongue, an auditive memory. Do not substitute for that a visual one. Train the ear first to seize the fundamental sounds of the language (*phonetics*) and then to grasp their combinations into words. It matters little if they at first make some mistakes in hearing; little French boys do the same, and say *un chien de fer* for *un chemin de fer*, *un loiseau* for *un oiseau*, *un gros narbre* for *un gros arbre*, etc. Such slips are easily corrected. When your pupils have acquired a small vocabulary of simple words and phrases, you will teach them how to spell; and in that you will be following a "natural process," for, curiously enough, even French boys speak first and learn to read and write their language after. Simple reading of specially prepared stories, etc., may then proceed simultaneously with speaking and writing; but to put reading first is a pedagogic crime.

Now I would like to point out why the *direct method* has not so far given satisfactory results in this country. The reason is perfectly plain; it is because we have never adopted it fully and whole-heartedly as a system, and never trained teachers in the use of it. Although most modern-language students in our univer-

sities are destined to become teachers in secondary schools, the universities do nothing to fit them for their task. University courses, comprising as they do a big dose of philology and literary history, and little practice in the spoken and written language, do not fit men to use the direct method. If we turn for a moment to what our French neighbours have done, it is at once apparent why they have achieved better results than ourselves. In France highly competent inspectors have in their *tournées* shown teachers how to work the new method; they have encouraged young teachers to become perfect in it, and discouraged those who continued to rust in conservatism. French language examinations are not only literary, but also intensely practical. A candidate for *agrégation* has to go through a course of teaching under the direction of a competent school-teacher; he prepares a programme from which philology and other dry-as-dustisms are practically excluded; his written examination consists of stiff *version* and *thème*, of a long literary essay in the foreign language and another in his own. His oral includes a lesson in the foreign language, translation at sight, and a grammatical and literary explanation of a passage from one of the set authors. I suppose that it is not difficult to understand that those who go through such a preparation and emerge triumphantly from such a competition are truly fit to become excellent direct teachers of the language studied.

Those of our men who have a really competent knowledge of the idiom they teach have acquired it by efforts of their own, for encouragements to the study of modern languages are as rare in this country as the rewards are meagre. They often enter schools where the older men cling to the translation method and will not work the direct in their classes—and unless the direct method is faithfully employed throughout the school it cannot give proper results. It would be interesting to know in how many English schools the pure direct method (I mean excluding translation, which is a literary exercise and has very little connection with language teaching) is used as the school system and worked by competent teachers who have acquired their French or German abroad. I remember that in two years of examining for Birmingham matriculation I was struck by the fact that the pupils of two schools—one of boys and the other of girls—did much better, both in written and oral work, than all others. I made inquiries and found that in both cases the teacher was English and the method employed the direct.

The direct method makes great demands on the teacher; it obliges him to be competent,

and that is one great point in its favour. It requires very good discipline in the classes (and that is possibly a reason why it is not always successful), a carefully arranged programme, and homogeneous teaching throughout the school. It is, in fact, a *system*, and must be worked as a system. But it is plainly the most logical system so far invented. Do not let us abandon it because we have not yet been able to work it properly.

THE PRACTICAL TRAINING OF ENGINEERS.

THE Institution of Civil Engineers held a conference in 1911 on the education and training of engineers. Arising out of this conference a committee has been inquiring into the matter of practical training with the special views of attempting to define and regularise the conditions of practical training for young engineers who might be likely to seek admission into the Institution, and of considering whether any steps can be taken to establish some co-ordination between engineering colleges and engineers and other employers, so that the practical training of well-educated students may be facilitated. Two classes of young men were considered: (a) those who take a regular pupilage or apprenticeship, but who do not receive systematic collegiate technical education; (b) those who take a full three-year course in good engineering colleges and obtain degrees or diplomas recognised by the Institution of Civil Engineers as exempting from its associate membership examination, with a shorter period of practical training. The training of artisans and foremen was not considered by the committee, which had in view that class of young men whose aim is the design and direction of engineering work. The report of the committee, issued recently, is of special interest to those who have to advise lads at the end of their course in secondary schools and in colleges.

It may be well to state here that there are certain branches of engineering—*e.g.* civil engineering, including such subdivisions as railway construction, dock construction, municipal and waterworks engineering—in which membership of the Institution of Civil Engineers is an essential qualification. There is practically no hope of promotion for the man engaged in these branches who fails to secure entry to the Institution. In many other branches—*e.g.* mechanical and electrical engineering, including the manufacture of engines of

all kinds and machinery generally—membership of the Institution is immaterial.

The inquiry was conducted partly by correspondence; conferences with leading engineers were then held, and Prof. W. Cawthorne Unwin acted as chairman at each meeting. Of the 234 engineers and engineering firms who replied to the inquiry, 75 per cent. make a practice of taking pupils, either indentured or unindentured. Of those who take pupils, 75 per cent. require premiums. About 70 per cent. of the pupils are indentured, the remainder being unbound by any legal agreement.

The conferences elicited the fact that there are engineering firms which have hitherto paid comparatively little attention to the relative educational attainments of young men who have made application for entry to their establishment with the view of acquiring practical training; almost the sole standard in such cases being the ability to pay a substantial premium. On the other hand, it is very satisfactory to note that several engineers at the conferences stated that they were opposed to the premium system, and would not have it in their works. The importance of this matter is well known, at any rate, to those who are concerned with the education of young men. Prof. Unwin's own experience is that two out of every three students who have been through his hands have been unable to pay premiums, and that these include the ablest men. Other educationists will be able to confirm this experience. It is well known that many firms actually give substantial advantages to pupils who have paid premiums, and make special arrangements for their adequate practical training, such as by the appointment of qualified men whose sole business is to look after the pupils. But in many cases the young fellow is simply turned loose into the works and is allowed to do very much as he pleases, the conscience of the firm being apparently satisfied by a weekly, or less frequent, inquiry as to how he is getting on.

There is no recognised system whereby a young man who has proved himself to be of exceptional ability at college may be taken without a premium, or at a reduced premium, into works which make a practice of taking premium pupils. Replies given to questions put at the conferences indicate that influence may in some cases secure entry without premium. A parent asks a firm of consulting engineers: "Can you get my son taken on at certain works?" The works may be making plant for the firm, and may, as an act of grace, take the man without premium. It seems to be unfortunate that there is no

equally strong evidence of free admission following an inquiry from the head of an engineering college such as, "Here is a man of exceptional ability and likely to be of service to you after a few months' practical training; he can maintain himself, but cannot afford to pay a premium."

The fact must not be overlooked that many students of ability leave college with what is popularly called swelled head, and that such students entering works are apt to give but little satisfaction. They expect to get to the top of the tree before they have even reached the first branches. College authorities cannot impress too strongly on their students that they are not engineers when their college course is terminated, and that a great deal of their practical knowledge will have to be obtained from contact with many people, foremen and others, who have not had college courses, but, on the other hand, possess life-long experience in matters vital to the engineer which cannot be taught in any college course. The obtaining of this knowledge depends very greatly on the bearing of the young man. On the other hand, it must not be forgotten that many engineers in works expect far too much of the college-bred young man, overlooking the fact that he still has all his experience to obtain, and are apt to set him down as a fool because he makes mistakes which a boy of only six months' works' experience would avoid. Fortunately in both these respects matters seem to be improving in recent years.

With regard to Prof. Unwin's pressing inquiry, what can be done in order that able students finishing their college course may avoid the unsatisfactory procedure of having to go about, hat in hand, as it were, saying, "Will you take me on?" The conferences have not solved this question so far as the payment of premium is concerned. It is satisfactory to note that among the recommendations of the Council is the request that members of the Institution should give special consideration to those who, having obtained exempting degrees and diplomas, desire to obtain practical training for the shorter periods allowed by the by-laws. Further, the Council suggest that some agency, such as the Civil Engineers' Appointments Board, might be utilised to place in communication properly educated young men who seek such training with engineers who may indicate willingness to afford it.

It may be pointed out that many colleges already possess appointments boards, and that these, especially that at Cambridge, have been of notable service. Students of such colleges are, of course, in touch with their

own appointments board, and this board can easily keep in touch with the Civil Engineers' Appointments Board, especially in view of the fact that all such colleges possess members of the staff who belong to the Institution of Civil Engineers, and are therefore acquainted with what the Institution is doing. The Civil Engineers' Appointments Board, if worked on broad lines, would appear to be capable of special service to parents of boys leaving secondary and public schools at ages from sixteen to nineteen years, and to the educational authorities of such schools. It does not appear whether such lads are contemplated as coming within the range of the Civil Engineers' Appointments Board; and, if so, whether any steps have been taken to make the existence of this Board known to the educational authorities concerned. It certainly would add very considerably to the usefulness of this Board, unconnected as it is with any educational establishment, if it could be made the medium for securing openings as pupils or apprentices for lads leaving secondary and public schools, many of whom are unacquainted with any person connected with the engineering profession and with the methods by which the profession can be entered.

THE BOARD OF EDUCATION AND LEAVING EXAMINATIONS FOR SECONDARY SCHOOLS.¹

II.

By E. SHARWOOD SMITH, M.A.

Headmaster of Newbury Grammar School.

IF it is laid down that a large proportion of pupils should pass this external standard, then a school will not be pronounced efficient if it fails to pass a large proportion of its pupils, and if it is not efficient it will have to be made so, or lose the grants, without which it cannot exist. At any rate, we shall be afraid of having failures, which will be just as bad. Instead of being a movement forward it seems to me undoubtedly a long step backwards. The freedom granted in name to teachers will in reality be stolen from them for ever. Of course, I shall be told it will all depend on the examiners. That is exactly my point. It will depend on the examiners and not on the teacher. I do not hesitate to say that written examinations as at present conducted, and as certain to be conducted by an external authority, are either a grave im-

¹ A paper read before the Teacher's Guild on January 6th, 1915. Continued from p. 53.

position or a solemn farce. I often feel inclined to paraphrase an old remark, and ask, How it is possible for one examiner to meet another without laughing? For what is a written examination, conducted by an external examiner who never sees the pupil, but holding an inquest on dead knowledge. And it is bound to be so. Examiners are only men, and when they are confronted with a task really beyond man's powers they are certain to take the line of least resistance, and ask questions the answers to which can easily be marked. I suppose some of us have had experience of a weary examiner with his pile of papers, and have noticed the meticulous care with which the first lot are looked over and the haste which marks his approach to the end. Do we suppose his standard is invariable? Are you not imprisoned in a vicious circle? No two examiners can have the same standard except for questions of fact. Unless, therefore, one examiner looks over a large number of papers, the standard is not uniform, and if an examiner looks over a large number of papers *intelligently set*, his standard is not uniform either.

I shall be told that this does not matter. First of all it is the method that obtains now, and secondly, in the large majority of cases, when exact marking is not needed, there will be no doubt about the pass. True, it is the method that obtains now, and some of the results of it are enough to make angels weep and schoolmasters groan, and it is just the doubtful cases that matter enormously. But here we are to have the schoolmaster's opinion and the results of inspection brought in. Then why not have it altogether? If the schoolmaster's opinion is suspect, it is just in the doubtful case that it will be most suspect. If not, let him decide without the external examiner at all.

Have we any reason from experience to trust the external examiner? Take up any examination paper you like, you will find that the majority of questions are such that the answers must be either right or wrong, or else they are such as can have easily been crammed up from introduction or notes beforehand. The result on the teacher preparing for an examination is always that he lays stress on the less important matters. Here is an instance which I believe to be thoroughly typical. A friend of mine had a son at one of the bigger schools. The parent, curiously enough, took considerable interest in what his son read at school. He found out that the boy had been reading Plato's Apology. His own recollection of it was somewhat rusty, but he tried to find out from the boy what impression the book had made

on him. Of course he did not ask the question bluntly. He knew boys. So he asked what the boy thought of the master and his powers of teaching. To this the boy, who was obviously fond of his master, replied that he was a most thorough man, and when asked why, told his father that he had simply spent hours in drilling his form with instances of the iterative *āv*. He had not had time, in a term of thirteen weeks, to finish the book; it remained unfinished because they were only examined on the first twenty chapters, but he had, at any rate, completely laid the ghost of the iterative *āv*. And this was the chief impression made by the reading of one of the great books of the world, or rather of two-thirds of it. Anyone may make a similar experiment for himself. Many of you know the test often used by psychologists, called, I think, the association test. You have a cunning little instrument—a pointer moved by a button somewhere out of sight of the victim you wish to examine. You ask him to tell you what idea or mental picture any particular name suggests to him. You give him a name, say, "Plato," and press the button. The indicator will draw a small or longer line according to the speed of the reaction. I have sometimes tested the results of education in a similar way. Though, of course, I do not believe it to be a satisfactory indication altogether, it will often open one's eyes to the real contents of our pupils' minds.

But, of course, all this will be altered when teachers are represented on the examining body. I wish I could believe it. The teachers placed on the body will be mainly headmasters and headmistresses of schools and those of the larger schools. The problems of the smaller schools are quite different from those of the larger, as some of us who have taught in both sorts are aware. And are not heads of schools appointed mainly for their *organising* abilities? And are they not all entwined in the meshes of the examination system themselves? Besides, with their larger numbers the question does not press them closely. Personally, I should feel more hopeful if representatives of the pupils were co-opted, but, as that is impossible, it would be most helpful to have some members on the body who have had no experience in either examining or teaching. We might then bring our education more closely into relation with life.

Surely we are not satisfied that an intelligent boy's chief impression of a great book should be the number of instances of the iterative *āv*.

Why, again, is such supreme importance attached to grammar and to verbal accuracy?

Accuracy is, of course, an admirable thing, but it is a plant of slow growth and cannot be forced. Grammar is obviously an easy subject to examine. A candidate either knows a grammatical peculiarity or he does not. Imagine what that means on the reading of the "Apology" in class. It means and must mean that the chief stress laid by the teacher will be on grammatical usages and peculiarities—above all, peculiarities. Will not the examiner's eagle eye inevitably fasten upon those? All else will come in as a by-product. Much of it may be good, but, if so, it will be by accident. Of course there is, I suppose, a certain value in the study of grammar, but surely not at the expense of Plato. And surely it is not to learn about the iterative *ἄν* that we teach classics in our schools. Why do we attach so much importance to the means, which, of course, have their value, while we almost entirely forget the end? The answer to that is, put shortly, "the fear of the examiner." Hence it comes about that in classical teaching long hours are spent on composition, on teaching our pupils to write like Cicero or like Demosthenes. I admit that a certain amount of good is done, inasmuch as it enables some scholars—but not the ordinary boy—to appreciate the niceties of the language of a great artist. But why make apes of them—sedulous apes in some cases, no doubt, but apes all the same? The answer, again, is "the examiner." Hence it comes about that even an intelligent pupil, after six years, we will say, of learning Greek, has a first-hand acquaintance with a ridiculously small proportion of the great works of the Greek writers. And I doubt very much whether questions dealing with the ethical or literary merits of a writer set by an outside examiner are not still worse. The answers will have been crammed beforehand from the introduction or the notes, or dictated by the teacher. The knowledge gained is purely parasitic. Can a pupil be examined at all in a book like the "Apology"? Well, I wish we could ask Socrates his opinion on the subject, but I can quite readily imagine what his reply would be. He would reply, I think, "Yes" by question and answer in the living voice of teacher and pupil.

I remember, when I was a boy at school in the sixth form, I was very much impressed by a book I read at the time—a book which is, I believe, still read, though perhaps not as much as it deserves to be. The book was "John Inglesant," and I remember being particularly struck by one passage, which, indeed, has remained fixed in my memory ever since. It is where John Inglesant is found by the priest, whose name I forget, reading the

"Phaedo." I think he gets the boy, who at that time was, I suppose, sixteen years of age, to translate a passage to him, and I remember distinctly the Father's good-humoured reproof of some small grammatical lapses. I was reading Plato myself at the time—for examination purposes—and I remember envying John Inglesant for being able to translate Plato straight off, and at the same time thinking that he would certainly not have been able to pass the Joint Board examination. And yet who would gain the greater good from reading the "Phaedo," a pupil like John Inglesant, who had penetrated to the very core and life of the book, though he may occasionally have translated a conditional sentence inaccurately, or the unfortunate pupil whose chief recollection of the work is the number of instances of "the iterative *ἄν*"? And it may sound "priggish" to say so, but I did want as a boy to understand what Plato was driving at.

Take, again, any play of Shakespeare, and read over any examination paper set by any of the examining authorities, and ask yourself, not as a schoolmaster or schoolmistress but as a reasonable human being, whether you really think that a boy of sixteen or seventeen has any right to be questioned thus. He *must*, in many cases, have been coached carefully in all possible questions to enable him to be sure of passing. In other words, as I have remarked before, his knowledge is purely parasitic. Personally, I believe the only way an average boy can really appreciate Shakespeare is to act him—that is, to live him—and thank heaven that cannot be tested by a written examination. Others think differently, but we must all be examined alike. And what of many other—indeed all other—subjects except, perhaps, mathematics? What of science, for example, and especially geography as taught by modern methods? After all, education is an art and not a science, and every true teacher is an artist, and like all artists he must more or less go his own way, and not a way laid down for him by external authorities. His business is, I suppose, mainly to interpret life for his pupils, or rather to teach them to interpret it for themselves. His masterpieces are not for competition, scarcely even for exhibition. Of course, I freely admit that very few teachers can be called artists. Most, like myself, have been so maimed and crippled by the swaddling bands of examination that we dare not wander from the beaten path, but must for ever keep our feet in the ruts of tradition. We are not born free. At a great price we must obtain freedom—at any rate, for those who come after us—and, gaining it, they will give it in larger measure to our pupils. In the great phrase of the

greatest of all educational thinkers, they will try to turn the eye of the soul towards the light. Are we to have no examinations at all then? Obviously in this imperfect world our work must be tested, but it must be by examinations made to fit the school. The schools are not to fit the examination. How should a standard or uniform examination be anything else but a Procrustean bed on which to cripple our pupils' lives and activities? How then shall we be tested?

It is not my business now to put forward any scheme of my own, but surely it ought not to pass the wit of man to devise something that shall be able roughly to appraise the value of a school. We *must* have freedom to cherish our own individualities and to work out our own salvation. But frequent inspections from sympathetic inspectors, whose first desire will be to discover the aims of the teaching and not to force it into rigid categories of alien manufacture, are surely sufficient for the purposes of a school test; and if particular boys must be labelled—and I suppose they needs must be—as fit for matriculation or any standard which is not competitive, why not have a conference between the staff, the inspector, and a *tertius examinans*, if you like, at the boy's own school? There his note-books could be scanned, his original work seen, the amount of his reading noted, and his shrewdness and originality tested by oral questions and even a few written papers. Of course, for competitive examinations there would have to be another test as well, but it ought to be possible to make the selection rest largely on the power to do original work: the writing of a thesis, for example, or the working out of a problem or an experiment.

Surely it does not pass the wit of man to devise some method less inimical to true education than a uniform external examination? Above all, I hope the Board will not be precipitate. I sometimes wish in my wilder moments that it would appoint a small commission, and give it two years before it reports? Six months might profitably be spent on studying recent examination papers. If the commissioners, after surviving that, are not convinced that a drastic reformation is necessary, I shall be greatly surprised. Then six months might be given to visiting the schools, and particularly the smaller schools. The dice are loaded far too heavily at present in favour of the big. Little schools, like little nations, have a great part to play in the education of the world. Another six months should be devoted to talking to men and women of all sorts and conditions—leaders of commerce, civil servants, working

men, anyone not connected with education professionally. Above all, several visits should be paid to the Little Commonwealth in Dorsetshire, where an educational experiment of supreme importance is being worked out. I wonder how Mr. Homer Lane would like an annual external written examination for his citizens?

For the final six months the problem should be pondered in absolute seclusion. And I would desire that most of the commissioners were neither teachers nor examiners, but men of detached position and independent outlook on life. If they could not suggest a solution, then the problem is insoluble, and we must go on as we are. But I have confidence that they would. And whatever system they produced should be revised every three years. For if teaching convinces me of one thing, it is that these permanent methods and enduring systems are fetishes that we must outgrow. We must continually break up our moulds and shatter our formulæ.

Education is a preparation for life, and must be as elastic and fluid as life itself. It is a *system* that I am afraid of. In that most illuminating of human documents, the autobiography of Father Tyrrell, one may read the deliberate conviction forced upon a great thinker by bitter experience that no system should outlive its founder. So readily is the system worshipped and the spirit neglected. So quickly do we crush all initiative and responsibility by substituting rigidity for elasticity and life. And now there is a great opportunity. This awful war must make us recast many of our most cherished theories. Whatever happens, the mentality of the nation cannot be the same as before. Our present system or lack of system may be bad enough now, but I am convinced that if we replace it with a cast-iron and uniform machinery, however cunningly devised, however carefully regulated by all sorts of checks and balances, we shall be in a far worse condition than before.

The uniform leaving examination was made in Germany; in Germany let it remain. It is not suited to the genius of the English nation. Freedom is the very life-blood of our existence; it must be also the corner-stone of our education. And I hope it is not necessary for me to state that by freedom I do not mean chaos. Of course, certain general principles must be laid down, and, of course, there must be some test and some examination. Every real teacher is always examining—particularly himself. Nor do I object to all external examiners. Far from it. Obviously in a democratic state in present circumstances we must have examinations of some kind.

The principles to which I wish to offer the strongest opposition in my power are, first of all, the necessity of what I may call the professional external examiner, who sets questions to a large number of pupils from different schools at the same time; and, secondly, the assumption that all boys of a certain age must submit themselves to a written external examination. I know that a large number will have to do so under present conditions—possibly always. I see no very great harm in individual pupils taking written examinations intelligently conducted. The very fact that their success depends mainly on themselves is no bad stimulus to industry and application, but I do object strongly to the principle of making the form the unit of the examination, and the power of forcing pupils through examinations the test of the school.

This will be considered by many a retrograde attitude, but I cannot help it. The idea of the form being the unit rests on the assumption, which I believe to be a pernicious assumption, that all pupils in a form should be doing the same work at the same time. Whatever be the educational principles of the future, whatever our attitude to various new schools of educational thought, I firmly believe that far more attention will be paid to getting the pupil to work for himself and by himself, or with the help of his fellow-pupils. So long as the class is the unit that reform—for I believe it to be a reform, and a great one—will be difficult, and, in my opinion, that one reason only would be fatal to the suggestions of the Board. Form teaching and form examinations mean treating individuals in the herd; they mean, and must mean, imposing the ideas of the teacher or the examiner upon the taught. And I consider that fatal to true education.

In this paper (which I am afraid is much too long) I have spoken almost entirely from the point of view of the boy and the schoolmaster, and naturally so, because all my experience has been in boys' schools; but as a parent of daughters I consider that my objections to rigid uniformity in examinations apply even more decisively to the education of girls. Girls are more prone than boys to accept the opinions of their teachers and examiners with submission and respect. Boys, fortunately for themselves, have the instincts of rebellion strongly implanted in their natures, and it requires more efficiency to eradicate them.

In conclusion, I would not like it to be thought that I am insensible to the strength of the arguments for the other side. I recognise their strength only too well. The proposals of the Board are attractive—fatally

attractive indeed. I candidly confess that when I first read them they almost persuaded me to become a convert. But, seeming fair as they are to the eye, I believe them to be inherently vicious in principle, and likely to retard rather than to accelerate progress in education. However carefully disguised and however well meant, they represent in effect a movement of the enemy in the age-long struggle between freedom and authority, between life and machinery, between local independence and State centralisation. And how deadly are the results if the victory rests with the latter of the two mighty opposites instead of with the former need not, I think, be more exactly demonstrated at this tremendous crisis in the history of the world.

PERSONAL PARAGRAPHS.

SIR HENRY A. MIERS has resigned the principalship of the University of London, on his appointment as vice-chancellor of the University of Manchester. The principal of the University of London has no sinecure, and only a man of great tact and administrative experience can perform the delicate and strenuous duties of the post. Sir Henry Miers came from Oxford with a well-established reputation both as a man of science and as a member of many boards, and he has won golden opinions during his six years at London, at a time rendered critical by the investigations and negotiations connected with the Royal Commission Report. He has impressed all by his courtesy, his scrupulous fairness, and his self-restraint; at the many meetings of boards of the university his silence has been masterly, and has given all the more weight to his words when he has spoken. He has deserved well of the University of London; and though his departure will fill many with regret, no one will blame him for accepting the Manchester post, where he will find scope for his undoubted capacity as an administrator, and also be able to resume his work as a teacher; he will occupy the chair of crystallography. To one who loves his work it is a real hardship to be so overwhelmed by administrative work as to have no time for research and teaching; and the work attached to the principalship of the University of London is almost more than can be expected of any one man.

* * *

MR. HAROLD CRABTREE died on January 28th at Girdlestonites, Charterhouse School, Godalming, from heart failure following pneumonia and pleurisy. Mr. Crabtree was educated at Charterhouse and was head of the

school from 1891 to 1893; he returned as a master in 1899 and became house-master on the retirement of Mr. Girdlestone in 1912. He was both a classic and a mathematician, and published, among other things, an "Elementary Treatment of the Theory of Spinning Tops."

* * *

LIEUTENANT A. H. SIMPSON, Royal Warwickshire Regiment, died on February 1st, while on active service, at the base hospital, Boulogne. Mr. Simpson was a master at Tonbridge School, where he had been an officer of the Officers Training Corps; he was gazetted to the Special Reserve of the Royal Warwickshires in December last.

* * *

CAPTAIN F. C. NORBURY, who was killed in action near Bethune, was a master at Oundle. He had served in the School Contingent of the Officers Training Corps and was appointed to the 1st Battalion of the King's Royal Rifles in October last.

* * *

CAPTAIN C. N. WHEELER, 3rd Battalion of the South Lancashire Regiment, who was killed in January, had been on the staff of the Liverpool Institute since 1905, when he joined the Assistant-masters' Association; he was a graduate in both arts and science at the London University, where he held a command in the Officers Training Corps and was appointed to the Special Reserve in November last.

* * *

MR. E. MONTAGUE JONES, who was educated at Bristol Grammar School and New College, Oxford, was for ten years a master at Leamington before becoming headmaster of St. Alban's in 1902. He is now in command of a company of the Hertfordshire Regiment on active service with the Expeditionary Force.

* * *

THE headmastership of Saham College, Watton, Norfolk, is vacant, the Rev. C. P. Hines being on active service. Mr. Hines, who was educated at Wellingborough Grammar School and King's College, London, was a master for two years at Bakewell and for eight years at Dartford before becoming headmaster of Saham College in 1911. He is a captain in the 4th Battalion of the Norfolk Regiment.

* * *

MR. J. Y. PEARSON, of Wellington College, Berks, died very suddenly of heart failure on January 23rd. Mr. Pearson, who was educated at Winchester and New College, Oxford, was a house-master at Wellington.

THE death is announced of Mr. Frank Reynolds, headmaster of Cardiff High School for Boys. Mr. Reynolds was educated at Queen Elizabeth's School, Ipswich, and Queen's College, Cambridge. He was for two years a master at Queen's College, Taunton, for nine years at Wesley College, Sheffield, and became second master of Cardiff High School in 1898; he was promoted to the headmastership in 1910.

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THE Rev. R. D. Beloe, of Corpus Christi College, Cambridge, has been appointed headmaster of Bradfield in succession to the Rev. H. Costley White.

* * *

THE Rev. Marchant Pearson, headmaster of Ardingly College, has been appointed headmaster of Workshop College. Mr. Pearson was educated at Kingswood School, Bath, at Wren and Gurney's, and at Yorkshire College, Leeds. Before becoming a headmaster, he held masterships at Rotherham Grammar School, Bradford Grammar School, and Bridlington Grammar School; his first headmastership was at King Alfred's School, Wantage, from which he went to Ardingly in 1911. He was for some years an energetic and effective member of the Assistant-masters' Association.

* * *

THE Council of St. Hugh's College, Oxford, has accepted with great regret the resignation of Miss C. A. E. Moberly, who has been Principal since the foundation of the College in 1886. Miss Moberly is to be succeeded by the present vice-principal, Miss E. F. Jourdain, who will take office at the end of March. Miss Jourdain, who is a Doctor of the University of Paris, was a mistress at Tottenham High School and at Clifton High School, afterwards becoming headmistress of the High School for Girls, Corran, Watford. Miss Jourdain became vice-principal of St. Hugh's in 1902.

* * *

MR. A. W. YOUNG, Fellow of University College, London, for many years headmaster of Tettenhall College, Staffordshire, and before that principal of Coleraine Academical Institution, died in January at his home in Edinburgh, at the age of seventy-eight. Mr. Young, who retired from active service twenty-four years ago, in 1872 took the gold medal in classics at the M.A. examination of the London University. He was the author of several books on classical subjects.

* * *

THE death is announced of Mr. R. C. Seaton, well known to classical scholars as the

editor and translator of "Apollonius Rhodius" and as treasurer until last year of the Classical Association. Mr. Seaton was educated at Shrewsbury under Mr. Moss and at Jesus College, Cambridge. He was elected for a fellowship, and in 1879 was called to the Bar by Lincoln's Inn. After practising for a few years, he became a schoolmaster; first at Dulwich and afterwards at St. Paul's, where he remained for more than twenty years. He was an authority on Napoleon and produced two interesting volumes on Sir Hudson Lowe, one of which was translated into French; he also edited Colonel Jackson's "Reminiscences of Waterloo and St. Helena." Mr. Seaton was for some years on the council of the Assistant-masters' Association and an active member of its legal sub-committee.

* * *

THE Chairman of the Education Committee of the London County Council at a recent meeting said that the members generally had learned with deep regret of the death of Lord Londonderry, who had accomplished much useful work for education on both the municipal side and the national side. For more than two years Lord Londonderry was the Chairman of the London School Board, and in 1902 he became the first President of the Board of Education, an office which was instituted in 1899, but until 1902 had been amalgamated with the office of Lord President of the Council. As President of the Board of Education Lord Londonderry had direct connection with the present work of education authorities, because it was during his term of office that the Education Acts of 1902 and 1903 were passed.

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PROF. FOSTER WATSON has been appointed Gresham Professor of Rhetoric in succession to Mr. Nixon, who recently resigned after holding the professorship for thirty-three years.

ONLOOKER.

TO AUSTRALIA: A VOYAGE THAT FAILED.

By Prof. H. E. ARMSTRONG, F.R.S.

FOR the benefit of future wanderers who seek to see things, it may be well to record the experience of the party of scientific adventurers, the advanced guard of the British Association, which sailed from home on June 22nd, 1914, bound for Perth, in Western Australia. The beginning was a bad one. Hustled on board from a train dispatched late from Euston, which arrived late at Liverpool, our ship left the quayside with indecent haste—to no purpose, moreover,

as she was at once moored in the stream and did not sail until two hours later; the owners must have known beforehand that there would not be enough water on the bar and could have informed us accordingly or delayed the hour announced for sailing: not a few of us were in sore need of a little more time with our friends, who had been summarily sent ashore.

Next day, a further delay, again to no purpose, was caused by our being called to the aid of a wrecked steamship, the *Gothland*, when off the Scilly Isles; during three or four hours we crept up to her through fog, in most skilful fashion, only to learn when we came plump upon her high up on the rocks—an imposing spectacle—that we were not wanted: her passengers had already been landed at St. Marys! Dramatic as the situation was and admirably as it illustrated the value of wireless communication, the experience was scarcely a compensation for the delay. Still, the event gave us complete faith in our captain's power to feel his way at sea.

We arrived at Las Palmas, Grand Canary, about 3 a.m. on Sunday, June 28th, far too early to land. The influence of the current *mañana* policy was at once apparent, as the agent ashore had disregarded our most positive instructions, sent to him by wireless, to have motor-cars ready for us at 6 a.m.; we did not make a start until after 8 a.m. Our visit to the interior was therefore a hurried one, as we were due to sail at 3 p.m. However, we managed to see a great deal and gained a clear idea of the structure of the island and of its vegetation—thanks to that wonderful exploratory institution, the motor-car. The fertility of volcanic deposits under climatic conditions such as prevail in the Canary Islands was sufficiently obvious even in the short time at our disposal.

As our ship steamed southwards, we sighted, towards evening, the Peak of Teneriffe, in the far distance, towering majestically above the clouds. We could only regret that we had not arranged to spend a week among these islands on our way: such is usually the fate of man; he is rarely alive to his opportunities until he has missed them, more often than not for ever.

Like ourselves, our ship probably was a little annoyed, as she made but indifferent progress between Las Palmas and Cape Town. Currents and headwinds were quoted as the excuse but we felt sure it was temper. And the sea was not boiling hot even at the equator but exceptionally cool, not to say cold; the skies, too, were grey day after day; the maximum temperature was only just above 80°; we afterwards learnt that far hotter weather was prevailing at home. Crossing the line, therefore, was in no way exciting and wraps were in request rather than ice-creams; in fact, only on two days between Liverpool and the Cape was it possible even for ardent grumblers to complain of the heat. Whether or no the cool weather preyed upon his nerves, Father Neptune was but a dull dog when he came on board in the evening after we had crossed into his special preserves. He even allowed a militant suffragette, who was called before him, to pluck at his beard and his myrmidons only

ducked her mildly without shaving her or smacking her as she deserved.

Nominally we were due at Cape Town on the Saturday but our hopes of spending some reasonable time there lessened daily, as run after run was declared unsatisfactory; we were even threatened that we should not be allowed to land at all, there being no need to tarry, as we had taken in coal at Las Palmas. We begged very hard for a decent interval ashore, at least eight hours, so that we might study the peculiarities of the region with some degree of thoroughness on this occasion of our first visit to a spot of commanding interest—had we not proved fractious our wishes would probably have been more disregarded than they ultimately were. To add to the irony of the situation, we wasted time, as we arrived shortly before midnight on Sunday, July 12th, yet did not go into dock until after 6 a.m. on the Monday. Then we further wasted time, at least half an hour, in getting a gangway hoisted up to establish communication with the shore: several gentlemen in gloves feebly attempted to get a crane on the quay out of the way; then a boss in uniform arrived on the scene on a bicycle and some happy inspiration at last led our friends to see that it was equally easy to raise the gangway astern of the crane without disturbing it. So we were not allowed ashore until 8 a.m. *Mañana* seemed to be at home even at Cape Town: alas, not on our ship; we were ordered to be on board again before 12 noon.

Arrangements had been made to receive us the day before and through the very great kindness of the Automobile Club sufficient motor-cars were available to take us about. We hurried and scurried hither and thither, in all directions, devouring the beauties of the spot, cursing the while the hard fate that obliged us to see so little where so much of interest lay at hand. Table Mountain everyone has heard of but few realise probably that the Cape Peninsula is a region of rare charm as well as of historic interest—if only as the home of Cecil Rhodes. The vegetation is altogether remarkable and peculiar and was probably nearly at its best when we saw it. A party such as ours, to do justice to such a locality, should have spent at least a week there; had we properly thought the matter out in advance, we should have arranged to leave our ship and go on by the next.

We sailed at noon, wiser but very sad, very angry with ourselves that we had not insisted on a longer stay. The penguins amused us during the afternoon as they swam about constantly ducking under water; then the great albatross came upon the scene, to accompany us throughout the rest of the voyage, a never-ending source of wonderment and enjoyment.

A week passed without incident; nothing more was sighted, not even a whale, during the whole voyage to Australia. The weather, brilliant at first, became dull and cooler but never cold, the sea a trifle turbulent—the greenhorns spoke of a storm, though really we were never seriously disturbed. We were due off the islands of St. Paul and Amsterdam on July 21st. The course we were on took us about eighty miles south of these islands but we were promised that if

our run on July 20th proved to be a short one, we should be taken within a mile of St. Paul, so that we might see into the remarkable crater lake which is its characteristic feature. The island is volcanic and one side of the crater has been worn away to a few feet below sea-level, so that boats can be rowed into the lake, more than a mile wide, occupying the crater. To judge from the picture given in the Admiralty chart, the island is of remarkable interest and we were all dying to see it. To our distress, we learnt on July 20th that our run had been a good one—and as the good are not rewarded in this world, we were once more deprived of the opportunity of adding to our knowledge—to pass the island by daylight, it would have been necessary to delay our passage four or five hours. This time we had really serious thoughts of mutiny and in the circumstances mutiny would have been justified—the opportunity was irrecoverable. But the official mind was obdurate. We were required at Perth on July 28th to attend a degree function at the University, a reception at Government House and a lecture by one of our party in the evening! Deep was our regret that we had allowed our Australian friends ever to arrange such a programme. The pill was all the more bitter when we reflected that had we but had the additional four or five hours we had so wished for at Cape Town, we should have been delayed to the necessary extent and able to accomplish our wish to see the island of St. Paul. There is no doubt that had we acted as one man and insisted on either occasion we should have carried our way; unfortunately, where science is there also is individuality, which is a quality unfavourable to organisation; divided we fell, had we agreed to unite we should not have been defeated.

As another week wore on, it was clear that we should not reach Fremantle before the afternoon of July 28th—so overboard went the University function and the governor's reception, unregretted too. We made the harbour about 4 p.m. but *mañana* still pursued us; we could not go alongside as there was no health officer at hand to pass us ashore—he was away at Government House, no doubt, to make excuses for our non-arrival. Ultimately, the shore party just got away by the 7 p.m. train to Perth and arrived there in time to give and attend the lecture. Some of us sought consolation in a local oyster shop and satisfied our craving for fresh food on oysters and crayfish, which were truly excellent.

Thus, after five weeks at sea, we were landed at the antipodes, greatly impressed by the fact that so much water lay between us and our Australian cousins. The voyage had no terrors, few of us were in the least ill and amity prevailed throughout—so accustomed did we grow to the ship, we were so comfortable, that we left her almost with regret. But no doubt remains in our minds that through force of circumstances, mainly owing to lack of time perhaps, we failed to think things out sufficiently before leaving home and therefore did not arrange to avail ourselves properly of the golden opportunities that lay in our way. The lesson is well worth learning and preserving for the use of future similar expeditions.

SECONDARY EDUCATION IN LONDON IN 1913.¹

ACCOMMODATION.—Considerable progress was made during the year 1913 in the provision of secondary-school accommodation. The new building for the County Secondary School for Girls, Streatham, was opened at the beginning of the summer term. This school replaces the County Secondary School for Girls, Stockwell.

The following schools were opened in the autumn term, 1913:—Strand School for Boys, Brixton, to replace the school formerly conducted at King's College by the governors of that college; the County Secondary School for Girls, Kentish Town, to replace two schools, namely, the County Secondary School, Kentish Town, formerly conducted in the Old Marylebone P. T. Centre, and the County Secondary School, St. Pancras, formerly conducted at the Working Men's College, Crowndale Road; and the County Secondary School, Plumstead, to replace the girls' department of the Woolwich Polytechnic Secondary School.

Each of these four new schools provides accommodation for 450 pupils. The Streatham and Strand Schools filled up rapidly, and by the end of the year were practically full. The County Secondary Schools, Kentish Town and Plumstead, filled more slowly, having by the end of the year 345 and 205 pupils respectively.

Building work was begun on the enlargement of the County Secondary School, Brockley, to accommodate 350 boys, and on the new smaller Secondary School for Girls at Chelsea, which is to accommodate eventually the girls attending the existing girls' school at Chelsea, to which the boys from the South-Western Polytechnic Secondary School are to be moved. Plans were approved for new buildings for the County Secondary School, South Hackney, which is to replace the school for girls now carried on in the elementary-school building at Cassland Road; and also for the new school to replace the County Secondary Schools, Forest Hill and Sydenham.

STAFFING.—The Education Committee, after considering the actual staffing and the amount of teaching required in maintained and aided schools, arrived at the conclusion that the number of full-time assistants required in a secondary school was between 5 and 6 per cent. on the number of pupils; that where the number of pupils was large the number of teachers should approximate closely to 5 per cent.; and that where the number of pupils was small the number of teachers might approximate to 6 per cent. on that number. This standard was borne in mind in fixing the staff of the council's secondary schools for the school year 1913-14, and in only a very small number of cases, where the circumstances were exceptional, was the number of teachers allowed to exceed the higher of the limits referred to above.

AGES OF PUPILS IN SECONDARY SCHOOLS AIDED AND MAINTAINED BY THE COUNCIL AT THE BEGINNING OF THE AUTUMN TERMS, 1913-12-11-10-09.

Aided and Maintained Schools Combined.

			Under 10.	Between 10 and 12.	Between 12 and 14.	Between 14 and 16.	Between 16 and 18.	Over 18.	Total number of pupils.
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Boys	...	1913	589	1,819	3,742	5,086	603	80	9,919 ¹
		1912	620	1,997	4,079	3,143	724	108	10,880
		1911	541	1,914	4,055	3,167	683	119	10,509
		1910	543	1,901	3,880	3,135	778	82	10,319
		1909	493	1,907	3,753	3,230	804	99	10,280
Girls	...	1913	589	1,458	2,820	2,470	817	48	8,202
		1912	565	1,411	2,722	2,558	843	96	8,165
		1911	519	1,376	2,609	2,600	793	109	8,006
		1910	555	1,311	2,666	2,661	787	93	8,073
		1909	640	1,370	2,971	2,783	991	147	8,902

The following table shows the figures in percentages:—

Boys	...	1913	5.8	18.4	37.7	31.1	6.2	0.8
		1912	5.8	18.4	37.5	30.7	6.6	1.0
		1911	5.1	18.5	38.5	30.1	6.5	1.1
		1910	5.3	18.4	37.6	30.4	7.5	0.80
		1909	4.8	18.4	36.4	31.3	7.8	0.96
Girls	...	1913	7.2	17.8	34.4	30.0	10.0	0.6
		1912	6.9	17.3	33.3	31.0	10.3	1.2
		1911	6.5	17.2	32.6	32.5	9.9	1.3
		1910	6.9	16.2	33.0	33.0	9.7	1.1
		1909	7.1	15.3	33.3	31.2	11.0	1.6

¹ The decrease in the total numbers is due to the transference of schools to the "non-aided" list.

If all the pupils stayed until sixteen, columns (4) and (5) should be approximately equal. It will be noticed that, taking the aided and maintained schools together, the difference between columns (4) and (5) in the percentage table for boys shows a slight decrease as compared with the past two years, though it is greater than in 1909. The difference for girls shows some increase as compared with previous years, though it is still less than in the case of the boys. The fact that girls, as a rule, stay longer at the secondary schools than boys is shown also from columns (6) and (7), from which it appears that the percentage of pupils above sixteen years of age is 10.6 in the case of girls, and only 7 in the case of boys. The percentage of girls above sixteen is, however, decidedly less than last year, when it was 11.5. For the first time this year, moreover, the percentage of boys above eighteen is greater than the percentage of girls. It appears to be probable that the improvement as regards boys may be due in part to an increasing recognition by parents of the value of a good secondary education as a preparation for a boy's career, and that the falling off as regards girls may be partly due to the number of minor clerical posts which have been opened up for girls through the recent rapid development in the different branches of the public service. As regards column (5) (pupils between fourteen and sixteen) the improvement as regards boys and the falling off as regards girls seem to be due largely to the increase in the proportion of junior county scholarships awarded to boys in 1909. The children elected in that year would be fifteen years of age at the beginning of the school year 1913-14. It is usually found that the council's scholars (both boys and girls) remain longer at school than fee-paying pupils.

CANDIDATES FOR THE TEACHING PROFESSION.—The falling off in the number of candidates for the teach-

¹ From the annual report of the London County Council, 1913, vol. iv.

ing profession, which has been noted in previous reports, shows a slight check, and, so far as can be judged by the figures for 1913, the number of candidates coming forward has reached the minimum, both as regards London and the country as a whole. It cannot be said, however, that any appreciable improvement has been shown.

The following figures show the number of bursars, pupil teachers, and student teachers admitted in London and in England and Wales for each year from 1908 to 1913:—

NUMBER OF BURSARS, PUPIL TEACHERS, AND STUDENT TEACHERS ADMITTED IN LONDON.

	Bursars and P.T's.			S.T's.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.
1908	263	918	1181	32	187	219
1909	216	662	878	154	464	618
1910	103	474	577	119	342	461
1911	93	384	477	53	218	271
1912	30	355	365	55	299	354
1913	31	338	369	41	318	359

SIMILAR FIGURES FOR ENGLAND AND WALES.

	Bursars and P.T's.			S.T's.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.
1908	2701	6854	9555	613	1182	1795
1909	2282	5677	7959	1077	2185	3262
1910	1520	4520	6040	984	2058	3042
1911	1280	4096	5376	801	1939	2740
1912	1084	3833	4917	separate figures not available.		2836
1913	1029	4103	5132	do.		2991

The important figures as regards the future supply of teachers are those giving the number of bursars and pupil-teachers combined. It will be seen, as regards London, that the number for 1913 is practically the same as for 1912, and, as regards the country generally, there is a very slight improvement. The same is true as regards the number of student-teachers admitted.

Perhaps the most important event in the year 1913 in connection with the training of teachers was the publication of the Board's new regulations as to the courses of study for students in training colleges, which first came into force for students admitted in September, 1913. The main effect of these new regulations is to allow greater specialisation on the part of the students. Hitherto the Board had required that students should continue to study practically all the subjects of the ordinary secondary-school curriculum, thus preventing the attainment of an advanced stage in any one subject. Under the new regulations the number of subjects taken by each student is considerably reduced, and opportunity is, therefore, given for the attainment of a higher standard in each. The changes have been warmly welcomed by the principals of the Council's training colleges, and although some difficulties in organisation have been experienced in putting them into effect, it is generally agreed that they will prove much more satisfactory than former regulations.

SCHOLARSHIP HOLDERS IN ENDOWED SECONDARY SCHOOLS.—A ruling of considerable importance in connection with the admission of pupils from elementary to secondary schools was given by the Board of Edu-

cation during the year 1913. The schemes of many endowed schools contain a clause to the effect that candidates who are fit for admission shall, if there is room for them, be admitted in order of the date of their application. The governors of endowed secondary schools have usually interpreted this clause as applying only to fee-paying pupils, and not to holders of scholarships awarded by the Council. In reply to an inquiry by the Council as to the interpretation of the clause, the Board replied that any discrimination against applicants for admission on the ground of their being holders of scholarships awarded by the Council would be inconsistent with the scheme. Up to the present there has not been very serious difficulty in obtaining accommodation for the Council's scholars in secondary schools in London, but, in the event of the pressure on the accommodation becoming greater, the decision of the Board that scholars and fee-payers must be admitted indiscriminately in order of their date of application may become of considerable importance.

THE SENSE OF SMELL IN INSECTS.

THE Smithsonian Institution, of Washington, D.C., has recently issued a paper, by Dr. N. E. McIndoo, dealing with the olfactory sense of insects, which consists of a general review of this unusually confused subject, presenting the views of different authors, discussing the seat of the olfactory organs, summarising the author's experiments, and citing a large number of scientific treatises on the subject, which comprises the first classification of such literature.

From the views of very early writers, including Aristotle, Virgil, Pliny, and others, it is evident that the belief in a sense of smell in insects has long been known and believed generally; also that some insects are able to distinguish various odours. While it is seldom denied that insects can smell, no one has yet ascertained the relative sensitiveness for any particular species, nor is the seat of the organs definitely located for all species.

The writings discussed are classified according to their view-points, as to the seat of the olfactory organs, which seems to be the main point of disagreement among them. One theory which has long since been abandoned was that these organs were located in the spiracles or nostrils of the insects, as in the case with the higher animals, but it was advocated by assumption rather than experiment, as no one has found any nerves or organs which suggest an olfactory function either in the spiracles or in the trachea, the windpipe.

One author holds that these organs are located in the throats of the various insects; one in the mouth cavity; several in the feelers attached to the mouth; many in the antennæ; and so on, until nearly every available portion of the insect's anatomy has been suggested by one or another student. Dr. McIndoo, however, has proved by experiments that many of these theories are wrong, by covering up, removing, or otherwise eliminating various organs, and testing the smell of bees, ants, and hornets thus treated, nearly

all of which respond as readily and as quickly to the fraction of a second as normal bees, ants, and hornets under similar conditions.

About one-half of his experiments were conducted to disprove the somewhat general belief that the sense of smell of insects is located in the antennæ, the horns or feelers attached to the head, constituting the organs of touch. To this end the experimenter tested honey-bees, ants, and hornets by removing one or both of their antennæ and noting the results when the insects were subjected to the odours from the essential oils of peppermint, thyme, and wintergreen. Honey, pollen, pennyroyal, formic acid from ants, etc., were also used in testing the sense of smell.

After disproving the theories of all the other writers concerning the seat of the olfactory organs, the author began to search for organs similar to those which he found a few years ago in spiders. These organs were soon found on the legs and wings of all the insects examined. Many experiments were performed which proved conclusively to the author that these organs are the true apparatus for receiving odour stimuli in the insects tested.

It is certain that spiders can smell, yet they have no antennæ nor any organs that may be compared with the antennal organs of insects. This is another argument against the antennæ being organs of smell. All insects either have antennal organs like those of the bees, or modifications of them, yet no two authors who have studied them have agreed concerning their function. Such chaos can be replaced by facts, only when the behaviour of the insects investigated is thoroughly studied and when experiments are performed in ways other than on the antennæ alone. Then it will be realised that the antennæ can no longer be regarded as a possible seat of the sense of smell in insects.

In conclusion, it seems that the organs called the olfactory pores by the author are the true olfactory apparatus in bees, ants, and hornets, and possibly in all insects, and that the antennæ play no part in receiving odour stimuli.

HISTORY AND CURRENT EVENTS.

THE war of trenches still continues in northern France, and though the official reports constantly speak of advances for the British and their Allies, a comparison of war maps dated at the beginning of January and February shows no change in the situation visible on the scale adopted. And in the eastern theatre of war the struggle between Russia and Germany seems for the present to have settled down to much the same conditions. The only thought which the layman can entertain on this stupendous struggle is whether what some months ago we regarded as a siege of France and Russia has now changed into a siege of Germany, and thus the land and sea operations are co-ordinated in an attempt to starve or crush Germany into surrender. We can recall no such situation in the history of past wars. Even Napoleon in his struggles against Britain allowed corn to be imported into this country because he thought he would thus drain from her the gold

which he believed to be the main source of her strength.

WHAT to us appears the main struggle being, therefore, at least for a time, in a condition which has been described as a stalemate, our thoughts turn to the war in Austria-Hungary. In the period before the war, which now seems such ancient history, we used to say that the death of Francis Joseph might involve the break-up of his heterogeneous possessions. So long had he reigned that he had become an established institution, the removal of which would cause revolutions. But now it seems that changes will come even before his death. What Rumania will do now she has lost her Hohenzollern founder, what Italy may do with reference to the lands in Austrian possession which some of her most ardent spirits desire to unite with the peninsular kingdom, are the problems of the day. Rumanians desire to gain Transylvania, a country where many Rumanians live, a principality which Hungary gained from Turkey in 1699, and has since suffered from Magyar domination.

THE history of the kingdoms of Israel and Judah as pictured for us in the books of their kings and in the writings of the prophets of the eighth and following centuries B.C. turns largely on the conflict for dominion between Egypt and the powers, Assyria and Babylon, which successively dominated the valley of the Euphrates and Tigris. Israel and Judah were then buffer States between the rivals, holding the route by which alone they could invade one another. Israel also lived in dread of possible invasions from the distant north. "Gog" was to invade and lay waste until he was destroyed. All this very ancient history is recalled to our minds by events now happening in that part of the world. Because Germany has so far exploited Turkey, which in the Middle Ages overwhelmed all that region, that she is involved in war with Britain and Russia, these two countries are advancing respectively from the Persian Gulf and the Armenian highlands against Palestine and Asia Minor. And Egypt does not oppose as in the past; on the contrary, it is now a British protectorate, and acts in conjunction with our forces in the Euphrates-Tigris valley.

THE constitutional history of any country is the result not only of its internal development but also of its external circumstances. Indeed, it is at least arguable that the latter are more influential in shaping the forms of government than the former. Certainly in a State like Britain, the institutions of which are elastic, the two centuries which have followed the Revolution of 1688 would easily supply illustrations of the effect of external policy on the working of political forces. It has been remarked that in the eighteenth century, during our second hundred years' war with France, Parliament was not so much engaged in legislation as we understand it as in measures necessary for the warfare. During the intervals of peace there was little for Parliament to do. And now that we are again engaged in a great war, Parliament meets, but "Government business" is to occupy the whole time and ordinary legislation, at least if it is contentious, is postponed "until after the war."

ITEMS OF INTEREST.

GENERAL.

"THE Board are now in a position to announce that funds have been placed at their disposal which enable them to increase the rates of grant payable for recognised students in training schools of domestic subjects by 50 per cent." Thus reads the opening sentence of the Prefatory Memorandum on the new regulations (Cd. 7723) issued by the Board of Education for the training of teachers of domestic subjects, and these words alone are sufficient to raise the hopes of all interested in this branch of education. The definite recognition of an organised course of instruction covering two years and dealing with domestic subjects as a whole, is the chief change from present regulations which admit of separate courses of varying length in cookery, laundrywork, and housewifery. The Board's attitude towards those students who, having already obtained a diploma in one of the domestic subjects, wish to add to their qualifications, is entirely sympathetic, and opportunities will still exist for additional training. To earn the increased grant certain conditions must be fulfilled by the training schools, but these appear to be entirely for the good of the school. The Board's requirements as to inspection and general conditions are clearly stated, and deal with the management and financial arrangements, the admission of students, courses of study, and tests of proficiency, the award of diplomas, and the rate of grant.

In consequence of the special circumstances and in accordance with Circular 869 issued by the Board of Education, the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield has modified its syllabus of the examinations in history and in geography for the year 1915. A third section in modern European history will be added to the usual two sections of the ordinary paper in English history. The answers of candidates must be confined to two out of the three sections. In the geography paper, questions will be set on the geography of Europe; these questions will be alternative to the questions set on the geography of North America, which is the geographical region specified for the year.

ONE of the more recent developments of University work has been the establishment of Appointments Boards to assist graduates in their after-careers, and the Board which looks after the interests of London graduates has recently issued an interesting pamphlet setting forth its aims and work. The chairman of the Board, which was constituted by the Senate in 1909, is Dr. C. W. Kimmins, chief inspector to the London Education Committee, and there are a number of co-opted members, representing business interests, as well as members of the Senate. The Board deals with all classes of appointments in which the University student is likely to be interested. As might be expected, many scholastic and educational vacancies are dealt with, but the Board also takes cognisance of Government, business, commercial, administrative, and secretarial openings at home and abroad. An increasing number of London graduates are yearly taking advantage of the practical assist-

ance offered by the Board, and the Board is satisfied with the success that has so far been attained. It is hoped to develop the work still more in the future, and make the Board a serviceable ally to the colleges and to the graduates. At the present time, of course, the war has suspended many sides of the Board's activities. The registers have been greatly depleted owing to graduates taking up Military Service as the most fitting "appointment" for the time being. The various classes of openings for men and women graduates (for the Board registers women as well as men) are clearly set forth in the pamphlet, copies of which may be obtained from the secretary to the Appointments Board, Mr. H. J. Crawford, University of London, South Kensington, S.W.

A COURSE of ten lectures on "Infants' School Methods" has been organised by the Lancashire County Council Education Committee. The course for the teachers in south-west Lancashire is held in the New Arts Building of the Liverpool University, by Miss M. C. Moore, on consecutive Saturday mornings from 10 a.m. to 12 noon. The inaugural lecture was given on January 23rd, and was entitled "The Need for a Firm Psychological Basis on which to Build Educational Principles and Methods." The first hour and a half was taken up by the lecture, while the last half-hour was devoted to a general discussion. During the remainder of the course lectures will be given on such problems as:—(1) The study of the development of the brain and nervous system of the child, and the application of this to work in the infants' school. (2) General considerations to bear in mind in planning the work of the infants' school and a brief introduction to methods of infants' teaching. (3) The value and place of play in the infants' school. (4) Handwork in the infants' school. (5) The Montessori system and its application to English schools. (6) School discipline and class management considered with reference to the psychology of the crowd. (7) The application of the principles already considered to methods of teaching nature study and gardening, recitation, stories, dramatisation, reading, writing, and arithmetic. The guiding principle throughout the course is the basing of all educational principles and methods on a firm psychological foundation, and on a knowledge of the development of the brain and nervous system of the child. The need for child study is shown, and the results of the latest researches are utilised in helping to solve the problems of the infants' school.

At the Cambridge Local Examinations held in December last, the total number of candidates entered was 8494, exclusive of 6025 candidates who were examined at Colonial centres. In the Senior examination, 744 boys and 1021 girls satisfied the examiners, 80 boys and 11 girls being placed in the first class; 434 boys and 169 girls showed sufficient merit to entitle them to exemption from one or both parts of the Previous examination. Of the junior candidates, 1389 boys and 945 girls passed, the numbers of those placed in the first class being 86 and 7 respectively. In the Preliminary examination, 941 boys and 626 girls passed.

WE have received from Wellington a copy of the report on secondary education in New Zealand for the year 1913, which has been presented to both Houses of the General Assembly. The total number of pupils attending the thirty-three secondary schools in New Zealand in 1913 was 6154, which included 934 boarders. Based on the estimated population of the islands on December 31st, 1913, the proportion of persons receiving some form of day secondary education was 93 per 10,000 of population. There are now very few pupils—only 21 in every 100—who pay fees for admission into secondary schools. That the free-place system has undoubtedly been taken advantage of fully by the people of New Zealand is evidenced by the enormous increase in free places in the last few years. In 1903 there were 1600 free pupils at secondary schools; now the number has increased by nearly 190 per cent. The average number of pupils per teacher (excluding part-time teachers), as estimated on the roll number at the end of the year was 21.1 in 1911, 20.8 in 1912, and 21.4 in 1913. The following summary shows the average salary paid to principal- and assistant-teachers in the secondary schools of the Dominion:—

1913.		
Men	Women	All
£	£	£
531	391	484
249	161	211
286	182	243

WE learn from our Chicago contemporary, the *School Review*, that an American teacher and observer, Mr. G. L. Fox, has been drawing comparisons between English and American secondary schools, to the distinct disadvantage of the latter. Mr. Fox states that in our schools "grammar and practice in composition in ancient and modern languages, are followed with a thoroughness and detail that is wholly unknown" in his own country, and he says that "text-books in different subjects, like algebra, geometry, trigonometry, history, classics, and modern languages are so much more difficult" than those used in America that an attempt to use them there "would meet with a most vigorous protest from pupils, parents, and teachers." He comments also upon "the great difference between the fearless and triumphant way in which the English boy faces and passes at different stages of his career difficult examinations, and the nervous alarm that many American boys feel when they attempt the much easier tests for entrance into college." Finally, the Rhodes scholars do not escape Mr. Fox's criticism. The editor of the review says that there is at least the charm of novelty in having English rather than German schools held up as models of perfection. For our own part, we hope that Mr. Fox is unduly pessimistic, and that he has missed some of the factors of which these international comparisons should take account. But we accept with satisfaction his hint that British decadence is in more ways than one a figment of the foreign imagination.

THE articles in the January issue of *Science Progress* are less technical in character than usual, and perhaps therefore of more interest to the general reader. Mr. Jenkins deals with the history of the alum trade as illustrating the international struggle for manufactures, and his paper is of particular interest at the present juncture in that it illustrates the need for a country to utilise its natural productions to the fullest extent, and particularly to perform the final steps of manufacture which demand the most highly skilled labour. The introductory article on militarism and party politics and the notes on a variety of topics all contain much plain speaking, and there are signs that the spirit of unrest, formerly characteristic of the labour market, is widely prevalent in scientific circles.

SCOTTISH.

THE existing war conditions are responsible for many departures from established usage, and probably ere all is over and done will be responsible for many more. In some parishes in Scotland the scarcity of labour for farm operations has led to a demand to suspend for a time the clauses of the Education Act which compel pupils to remain at school until fourteen years of age. The School Board of Canonbie, Dumfriesshire has remitted to a committee to draw up suitable regulations for allowing boys of twelve years of age and upwards to leave school for the summer months to help in farm work. If the necessity for this measure is clearly proved no one is likely to raise objections on purely technical grounds, but the farming interests in the past have not shown themselves excessively loyal to the compulsory clauses of the Education Act, and have in many instances broken them so far as they dared. The Education Department should therefore demand clear proof that the alleged scarcity really exists, and that it cannot be met in any other way than through the proposed measure. Another side of the same question is to be seen in the motion proposed by one of the members of the Glasgow Provincial Committee to set free the students-in-training at Easter instead of at the summer vacations. Here again the onus of making out a case for the proposal rests on the framer of the motion. He will have great difficulty in proving that scarcity on a scale to justify such a step really exists. Scarcity there is, and will continue to be, doubtless, but it can be met by the employment of superannuated teachers, who will be only too glad to eke out their inadequate pensions by a return to their old employment. In any case, nothing can justify flinging into our schools "half-baked" teachers.

At the monthly meeting of the Glasgow Teachers of Domestic Science the Rev. Dr. Smith, chairman of the Govan School Board, gave an address on early education in Scotland. He said that the earliest statute dealing with education was one passed in the reign of James IV. (1494), which ordained that all barons and freeholders of substance should "put their eldest sons and aires to schules frae they be six or nine years of age, and till remain at the grammar

schules quhill they be competentlie founded and have perfite Latin." The penalty for failing to obey this order was a fine of £20. But, after all, Parliamentary statutes counted for little in Scottish educational advance. The real driving power had been the exertions of the clergy and the courts of the church. John Knox's "First Book of Discipline" contained not only the germ, but in detail the main features that had characterised Scottish education from the Reformation until the present day. Knox, in his prophetic sweep of vision, had pictured forth a national system which recognised the need of compulsion, which called for the provision of an adequate bursary scheme to carry lads of promise to the university, and indicated the necessity of some technical training for those who were to make trade and industry their life work. Nor did he overlook the claims of women to a place in his scheme of education, "and the same we require of the girls, to wit, that they be virtuously brought up and honestly endowed before they come to maturity of years."

At a joint meeting of the Edinburgh and Lothians Branches of the Educational Institute an interesting discussion took place on the question of a "National Union for Teachers." Mr. R. G. Dickson, president of the Institute, said that any scheme of union which offered hope of success must have regard to existing interests. There was no hope of attracting secondary-school teachers into an association where their expert opinion on matters affecting their own schools could be voted down by the great mass of the members. The proposed scheme, to be effective, must grant them a free platform for their views, and a fair share of representation for their members. The Education Department was largely to blame for the increasing sectionalism of the teaching profession. It had arranged the teachers in compartments, steerage passengers, second-class passengers, and first-class passengers, and allowed them no intercourse during their educational voyage. The first step towards a united profession was to break down these middle walls of partition and make *la carrière ouverte aux talents*.

At a meeting of the English Association in Glasgow Mr. T. D. Robb, Paisley, gave an interesting address on ballad theory. He spoke first of the theory of Grimm that ballad poetry was the creation not of the individual but of the community—*Das Volk dichtet*. This view had been supported and elaborated by Prof. Gummere. Prof. Ketteridge had recently modified this theory by accepting its communal origin but assigning to each member of the dancing throng a share in the whole composition. Prof. Gregory Smith denied the antiquity of the ballad, and regarded it merely as part of the literary débris of the later Middle Ages. Prof. Courthorpe also rather favoured this view, holding that the ballad was simply an inferior variety of metrical romance first devised by the professors of the declining art of minstrelsy. Mr. Robb argued strongly for the antiquity of the ballad, affirming that neither in fact nor in logic were the epic and romance prior in time to popular poetry.

At a meeting of the Galashiels School Board it was reported that the Education Department had refused to sanction the payment of £500 as the salary for the medical officer for the school district. The school board pleaded that the British Medical Association would not allow any of its members to take the appointment of medical officer under less than £500 a year, but the Department was obdurate, and meanwhile the deadlock continues. It will be interesting to note how the Medical Association, the most powerful professional organisation in the country, succeeds in its contest with the Education Department, perhaps the most powerful bureaucracy in the country. Certainly the time for entering upon the struggle has not been well chosen by the Government Department, as doctors at the present moment can scarcely be had even at ransom salaries.

THE four Provincial Committees which nominally control the training of teachers in Scotland have now been reconstituted. The *personnel* remains very much the same year after year, and under existing conditions it matters little what is the composition of the committee. Prof. Darroch, at the first meeting of the Edinburgh Committee, said that it was absurd for committees charged with such important work as the training of teachers to be at the mercy of minutes of the Education Department. These bodies indeed have become mere phonographs for recording Departmental opinion. "They have a name that they live but are dead." The amazing and altogether unsatisfactory feature is that representative men from all parts of Scotland can be brought together meeting after meeting merely to register the views of the Department. They cannot expend a single shilling or make the smallest appointment without first having obtained the permission of the Department. The Provincial Committees are the biggest sham in the educational world, and the sooner they are ended or mended the more creditable it will be for the country.

THE Education Department, in response to urgent representations from Celtic societies and school boards, has agreed to institute a leaving certificate in Gaelic. For many years Gaelic has held a place among the subjects of examination for the Intermediate certificate, but hitherto there has not been sufficient demand to justify including the subject on the higher grade standard. The considerable Celtic revival now going on has led in many Highland parishes to an intensive study of the language which justifies the Department in making this further concession in the interests of the old language.

IRISH.

THE Teachers' Salaries Grant of £40,000 a year seems at last, after much tossing on stormy seas, to be making the desired haven. The rules for its distribution are now lying on the tables of the Houses of Parliament, and unless they are objected to and defeated there, they will come into operation by the end of March, and the money will then be paid to the Intermediate schools for the year ending last June, and will go on being paid annually.

SINCE the opening of the year, however, the grant seemed to be at a critical stage when anything might have happened. The Treasury and the Irish Government could not agree on the rules for its application, and though no one knew exactly what rules were proposed, it was a fairly prevalent view that the deadlock might have lasted until the end of the financial year in March, and then the money would certainly have been lost for this year, and perhaps, under the wording of the Home Rule Bill, for ever. At this point, however, a strong agitation directed public attention to the danger, and there was a loud outcry for a settlement of the difficulty whatever it was. The various teaching associations appealed to the Government, especially the Assistant-masters' Association which feared to lose the benefit of an Act passed solely for the advantage of its members. The School-masters' Association of Protestant Heads of Schools, seeing that the time was getting too short for any scheme of registration to be passed in accordance with the Act, urged that the money for 1914 should be distributed in accordance with simple provisional rules which should comply with the spirit of the Act and meet with the approval of the Intermediate Board. The Church of Ireland and Presbyterian Education Committees urged similar views upon the Castle and the Roman Catholic Hierarchy issued an important statement dealing with the matter.

As admittedly Mr. Birrell's object in passing the Act of Parliament was to benefit the lay assistants in Catholic schools, the views of the Catholic bishops are of great importance. After deprecating attempts made to fasten upon them responsibility for the grievances of their lay teachers they have stated their position in a resolution under five heads:—(1) All teachers, lay and clerical, have grievances calling for immediate redress in the absence of facilities for registration, reasonable security of tenure, adequate remuneration, and a right to a pension; (2) those grievances cannot be redressed on account of the poverty of the schools until a State grant is made equivalent to that given in England and Scotland, which would amount, not to £40,000, but to £154,000 a year; (3) any discrimination in remedying these grievances between lay and clerical teachers would be unjust to the clergy; (4) they are, however, willing to use their share of the grant to provide the minimum salaries for qualified lay teachers in their schools, but suggest that instead of the originally proposed condition of one lay teacher for every forty pupils in each school, the condition should be one lay teacher for every fifty pupils in all the Catholic schools taken as a group, although the proportion of one to forty in each separate school is only equal to the proportion of one to sixty in the aggregate of schools; and (5) this is suggested only as a temporary compromise, not because it is fair, but in the hope that when a register has been formed the discrimination of lay and clerical teacher will disappear.

THE Government has not, however, accepted this compromise, but in the rules now before Parliament has adhered to the proportion of one lay teacher to every forty pupils in the schools taken in two aggre-

gates, one Catholic and the other non-Catholic. The rules are in summary as follow. Rule I. contains certain definitions. The number of pupils in a school means the number between twelve and nineteen years of age receiving Intermediate education and each making one hundred attendances between September 30th and the following June 1st. A duly qualified teacher means a registered teacher. Until a register has been established for a year, it shall mean a person above twenty-one years of age teaching Intermediate subjects in a school for not less than ten hours a week, if either he has been so engaged for not less than two years or is a university graduate. Rule II. states that the grant is to be distributed in proportion to the amount of result fees paid to the schools by the Intermediate Board, and is intended to promote the employment upon reasonable terms of an adequate number of lay teachers. Rule III. defines that the number of lay teachers in each group—Roman Catholic and non-Roman Catholic—is to be not less than one-fortieth of the total number of Intermediate pupils attending the schools, the teachers to be engaged for not less than ten hours a week teaching Intermediate subjects, to receive an appropriate minimum salary, and to be entitled to three months' notice in writing, taking effect at the end of a school term. The Intermediate Board will distribute the grant and report to the Lord Lieutenant with respect to its distribution. A schedule added to the rules prescribes the minimum salary (1) when board and lodging are provided as £110 a year for men and £70 a year for women; and (2) otherwise £140 for men and £90 for women.

THE Department of Agriculture and Technical Instruction will offer for competition in June next three teacherships-in-training tenable at the Metropolitan School of Art, Dublin. One will be restricted to men and one to women. Candidates must be between eighteen and thirty years of age, and have either been born in Ireland or resident there for three years. The teacherships are, in the first instance, for one year, giving free tuition and a maintenance fee of 21s. a week, during the session of forty weeks, but may be renewed for a further session.

THE Department has also issued in detail general regulations governing the conduct of technical school examinations for this year. The scheme is designed to follow courses of instruction extending over four years in commerce, building trades, applied chemistry, electrical engineering, mechanical engineering, domestic economy, and art. There will in general be two examinations in each course in each of the four years; in 1915 there will be examinations in the subjects of the first, second, third, and fourth years of each course, to be held in May, and the Department has issued a printed time-table of the examinations.

WELSH.

THE annual publication of the Welsh Department of the Board of Education, entitled "St. David's Day," is a remarkable production, which should be of deep interest to many outside Wales, as well as to Welsh people and to those who are within their gates

and engaged in their service. The book is issued in Welsh and English, and is printed in Wales on paper made in Wales; considered merely as a piece of artistic printing, it is probably not surpassed by anything produced in Wales. It is enriched with ornamental borders and initials, and contains coloured facsimile reproductions of illuminated initials from the Book of Kells. Addressed in the form of a personal message from the permanent secretary of the Welsh Department to the children of Wales, it directs attention to the fact that 1915 is the five-hundredth anniversary of the death of Owain Glyndwr and the hundredth anniversary of that of General Picton, the Pembrokehire leader, who was Governor of Trinidad, and fell at the head of his men on the field of Waterloo. There are accounts of these two men's lives and times, notes on the Book of Kells and other Celtic books, the story of "Hen wlad fy nhadau," with an unusually successful translation of it into English in the metre of the original, suggestions to teachers for the celebration of the patron saint's feast day, and many other noteworthy features. All through the book there runs a strain of sustained but sober patriotism, the utterance of Welsh national aspiration at its best and highest. There must be many persons outside of Wales who are inclined to ask what Welsh nationalism means and what its exponents want: we advise them to get this book and learn the answer to the question from it.

On January 16th there was unveiled in the grounds of the Council School, Brynmyn, Glamorgan, a monument to the memory of Sarah Jane Howell, a teacher in the school, which was at the time of her death in temporary buildings at Ynysawdre, by the side of the River Llynfi. This river, fed by several mountain streams, rises rapidly and becomes a swift-flowing torrent after heavy rains; this was its condition on December 19th, 1911, when a boy of the school went into the water to recover a football which had been kicked into the river. He was carried off his feet by the current, and Miss Howell, hearing cries for help, ran to his assistance and plunged at once into the water; she was carried away and drowned, the boy being brought to the bank by the current and saved. A committee was formed, under the presidency of Lord Aberdare, to arrange for some commemoration of this brave deed, and, subscriptions being readily forthcoming, they were enabled to commission Mr. L. S. Merrifield, a pupil of Sir Goscombe John, to design an appropriate memorial. It consists of a shaft of Portland stone, supporting the figure in bronze of a countrywoman bearing an apron full of flowers to the memory of the dead girl—she was only twenty-two years of age—her portrait occupies a medallion in bronze on the face of the shaft, and another bronze tablet records her brave deed. After the unveiling of the monument by Alderman William Llewelyn, chairman of the Bridgend Bench, the certificate of the Royal Humane Society and a bronze medal from the Carnegie Hero Fund were handed to Miss Howell's parents. The funds available will also provide a county school scholarship to be known by her name.

THE Welsh National Library has received two important donations, one of £1,000 from Mr. E. D. Jones, of Pentower, Fishguard, who had previously given one hundred guineas, and one from the estate of Sir Alfred Jones of £1,200 for a muniment room to bear the testator's name.

PROF. KUNO MEYER, who lately held the chair of Celtic at Liverpool University, and has since the beginning of the war gone to the States, delivered an address to the Clan-na-Gael Society of New York, and also wrote a letter to the *Times* making a violent attack on Britain for her part in the war. Prof. Meyer is an honorary graduate of the University of Wales, and on January 15th the Standing Executive Committee of the University passed a resolution regretting that under the powers given to the Court by the Charter, it was not able to mark its sense of the dishonourable conduct of Prof. Meyer by recommending the Court to revoke the degree *honoris causa* conferred upon him.

MORE WAR LITERATURE.

BY PROF. F. J. C. HEARNshaw, M.A., LL.D.

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SINCE the publication of my notes on war literature in the December issue of THE SCHOOL WORLD there has been a constant and colossal output of writings relating to the great struggle. All the countries directly or indirectly concerned in the war have contributed their share. Germany, for her part, has apparently found poetry a more congenial vehicle for the ideas she wishes to express than the prose of history or law, for one of her newspapers estimates that before the end of the year 1914 more than one million war poems had actually found their way into print. Austria has issued a "Red Book," which, like the German "White Book," omits the all-important diplomatic correspondence which passed between Berlin and Vienna during the critical fortnight that preceded the war. France has published her long-delayed but invaluable "Yellow Book" (procurable in an English translation for one penny at all bookshops and bookstalls). It not only bewrays the German conspiracy against Europe in 1914, but reveals the fact that a similar plot in 1913 almost came to a head. It is difficult to conceive how, in knowledge of the documents contained in this damning revelation, either the French or the British Government can have been content to neglect so seriously as they did ordinary military precautions. As to British and American publications on the war, their name is legion. It has long since ceased to be possible for a reviewer to keep pace with them. All he can do is to single out for notice a few of the more remarkable among such as have come his way, and for the rest to refer the curious reader to two bibliographies which have already been issued as aids to the perplexed, viz., "List of Publications bearing on the War," published by the Central Committee, 62 Charing Cross, W.C., at the price of 2d.; and "Books on the Great War," by F. W. T. Lange and W. T. Berry (pp. 55, Grafton, 2s. 6d. net).

The Central Committee's list contains between 400 and 500 items—some of them, it is true, works of general importance belonging to the period before the war. They are classified into two groups, viz., (a) books, and (b) pamphlets; and if it be asked how

a book can be distinguished from a pamphlet, the answer is, by its price. A book costs at least 7d.; anything published at a lower price is a pamphlet. Perhaps in a school of logic the basis of classification might be questioned, and it might be asked to which class should be assigned that particular publication which the *Times* issued at 2s., but the Government at 1d. But in war time we are all pragmatists, and practical convenience is our criterion of value. Judged by this standard, it is a good classification; for publications at 7d. and above are not too numerous to receive individual notice, but pamphlets swarm so thickly that they can be dealt with only in groups.

A.—BOOKS.

There are three classes of recent war books that deserve the attention of teachers. They are, first, those that deal with the ideas and opinions out of which the war ultimately sprang, or from the triumph of which in the future a better order of society may be expected; secondly, those that discuss the historical antecedents of the war; and thirdly, those that relate to the outbreak itself. In the region of ideas two men (both of Slavonic origin, though of Germanic culture) represent those conceptions of the non-moral superman, the remorseless superstate, and the unscrupulous will-to-power which characterise Germany's present murderous megalomania. They are, of course, Nietzsche and Treitschke.¹ Nietzsche was well known in England before the war; his complete works in eighteen volumes had been translated into English, and a certain number of young people called themselves his disciples. The following recent works, however, may be commended to those who are still in ignorance of what super-humanity really is, except in so far as they have seen its manifestations in German military operations:—Halévy, D. (translated by J. M. Hone), "Life of Friedrich Nietzsche," (Unwin, 2s. 6d.); Kennedy, J. M. ("The Quintessence of Nietzsche" (Laurie, 6s.); and Förster-Nietzsche, E. (translated by P. V. Cohn), "The Lonely Nietzsche" (Heinemann, 15s.). The last named is a most important original work by the sister of the philosopher. It contains many new documents and much fresh biographical matter. It covers the last twenty-four years of Nietzsche's life (1876-1900), during the first twelve of which he was producing his principal works, during the last twelve of which he was hopelessly insane. "Treitschke and the Great War" is the theme of a volume from the practised and capable pen of Mr. Joseph McCabe (Unwin, 2s.), while "The Political Thought of Heinrich von Treitschke" has been analysed by Mr. H. W. C. Davis (Constable, 6s.). Of ideas that look rather to future peace than present war, two notable examples are presented in Prince Kropotkin's "Mutual Aid" (new edition, Heinemann, 1s. net), and Mr. Norman Angell's "Prussianism and its Destruction" (Heinemann, 1s. net). Prince Kropotkin shows how incomparably greater are the advantages of co-operation than those of conflict; Mr. Norman Angell still preaches to a battered but unbelieving world (including the relics of Belgium) the doctrine of the unimportance of political and military power.

The historical antecedents of the war, concerning which the man-in-the-street has become so solicitous of knowledge, are dealt with from various points of view in the following books:—(1) Adkins, F. J., "The War: its Origins and Warnings" (Allen, 2s. 6d.). Mr. Adkins traces events far back to Charlemagne's day, but he also brings them up to date and utters some solemn warnings to Britain, who, he holds, by

reason of her past slackness and folly, scarcely deserves to emerge victorious from this struggle; (2) Laurie Magnus, "The Third Great War" (Arrowsmith, 1s. net). Mr. Magnus draws an interesting parallel between the war of the Spanish Succession, the Napoleonic War, and the present conflict, his particular purpose being to urge that the prospective treaty of peace may not be so fruitful a cause of further wars as were the treaties of 1713 and 1814. (3) Dr. Holland Rose, of Cambridge, in "The Origin of the War" (Cambridge University Press, 2s.), and Prof. Ramsay Muir, of Manchester, in "Britain's Case against Germany" (Manchester University Press, 2s. net), both, from full knowledge and with very great ability, set forth the course of the events, especially from the time of the Franco-Prussian War, which have culminated in the existing crisis. (4) A popular sketch of the relevant history of the nineteenth century, excellently printed, and well-illustrated with war pictures, is provided by C. Morris and L. H. Dawson's "Why the Nations are at War—the Causes and Issues of the Great Conflict" (Harrap, 5s. net).

Of books relating specially to the diplomatic crisis of August last and the responsibility for the war, two are notable. One is English, viz., J. W. Allen's "Germany and Europe" (Bell, 2s. 6d. net); the other is American, viz., J. W. White's "America's Arraignment of Germany" (Harrap, 1s. net). Mr. Allen's volume embodies four lectures delivered at Bedford College last autumn. It constitutes a crushing indictment of Germany on the ground that she "set her own particularist interests above those of Europe and deliberately brought about war." It vindicates the attitude and action of Britain, although it holds that the Government hesitated two days too long about its ultimatum, and finally made a secondary matter (the violation of Belgium) the *casus belli*. Dr. White's vigorous arraignment of Germany is presented in the form of answers which, as a neutral American, its author has sought to twelve leading questions relating to the war, such as: "What evidence exists as to the real reason, the fundamental cause, of this war?" The answers are all that an Englishman could desire. Let us hope that they are received with equal cordiality in America. For Dr. White does not hesitate to say that the victory of Germany would be the ruin of America and all she stands for, and he considers that her duty and her interests alike call her to the side of the Allies. Dr. White has produced a very powerful book, fortified by a large number of important quotations.

B.—PAMPHLETS.

The Oxford University Press continues its admirable series, which now extends to well over fifty items. They are procurable either separately, at prices from one to three pence, or bound in neat little volumes containing five pamphlets each, at the price of one shilling a volume. Among the subjects dealt with in the latest additions to the series are (vol. ix.) Belgium, Poland, Turkey, Greece, and Sleswick; and (vol. x.) the war in various economic and philosophic aspects.

Messrs. Macmillan have now issued some two dozen pamphlets in all. Among the more notable of these recently published are (1) Sir Edward Cook's summary of the White Paper on "Britain and Turkey: the Causes of the Rupture," 2d.; (2) Mr. J. W. Headlam's excellent *Church Quarterly* article on "England, Germany, and Europe," 2d.; and (3) Mr. Harold Cox's brief statement concerning "The Economic Strength of Great Britain," 1d.

¹ They are discussed together in one of the Oxford pamphlets by E. Barker, and in a S.P.C.K. pamphlet by Canon E. McClure.

Messrs. Williams and Norgate have done good service by reprinting from the *Hibbert Journal* the stirring last message of Lord Roberts to his fellow-countrymen on "The Supreme Duty of the Citizen at the Present Crisis" (price 3d. net). Lord Roberts, who warned the country in 1912 of the evident probability of this struggle, now urges the country not to under-estimate either its magnitude or the vastness of its issues.

Messrs. George Philip and Son, of Fleet Street, have issued a useful "Photo-Relief War Map of Central Europe" (1s. net.), and (on behalf of the *Daily Mail*) an attractive sheet, accompanied by descriptive notes, showing the "Flags of the World," together with types of warships and aircraft (1s. net).

GEOLOGY FOR SCHOOLS.

(1) *A First Book of Geology*. By Albert Wilmore. vii+141 pp. (Macmillan.) 1s. 6d.

(2) *An Introduction to Geology*. By C. I. Gardiner. xiv+186 pp. (Bell.) 2s. 6d.

(3) *Geological Excursions Round London*. By George MacDonald Davies. vi+156 pp. (Murby.) 3s. 6d. net.

(4) *Minerals and the Microscope*. By H. G. Smith. xi+116 pp. (Murby.) 3s. 6d. net.

(5) *Elements of Mineralogy*. By F. Rutley. Eighteenth edition. viii+267 pp. (Murby.) 2s. net.

(6) *Mineralogy*. By F. H. Hatch. Fourth edition. ix+253 pp. (Whittaker.) 4s. net.

(7) *The Petrology of the Sedimentary Rocks*. By F. H. Hatch and R. H. Rastall. xiii+425 pp. (Allen.) 7s. 6d. net.

AFTER a trial of nearly fifteen years in our schools, nature-study has amply justified itself as an educational instrument. Naturally, it has been chiefly concerned with observations of familiar animals and plants, since the average child is more keenly interested in living things than in others. Leaders in the movement insisted from the first that its paramount aim should be to train children to find out and explain facts for themselves, and that the amount of information actually acquired was for the time being of secondary importance. It was speedily recognised, however, that even as a means of assimilating facts, the method, used judiciously, was superior to the old dependence on the memory. Many teachers found that simple sky-study, outdoor observation of the work of running water, and the like formed excellent occasional departures from the narrower conception of nature-study. In the higher forms, heuristic methods, shorn of their first extravagances, have been applied with equally happy results to chemistry and physics, and finally their extension to geography has practically revolutionised the teaching of that subject also.

One most valuable feature of the modern teaching of geography—which finds, or attempts to find, the reasons for geographical facts previously accepted almost without comment—is that to elder pupils especially it presents fascinating glimpses of astronomy, geology, and various other sciences alien to the usual school curriculum. It is matter for no surprise but for much satisfaction that an increasing number of such pupils show a real desire for a closer acquaintance with these subjects.

It is perhaps only a small proportion of schools which can undertake systematic work in geology at present, but without attempting this, a great deal may be easily done to help pupils who wish to take up the subject as a hobby.

The books mentioned above are arranged in the order in which they are likely to be most useful to

beginners at school. Dr. Wilmore's "First Book" (1) will serve well as an introduction. It gives an excellent outline of main principles, and is well provided with instructions for simple but significant practical work at the beginnings of the chapters. Chapter x., "Historical Geology," and chapter xiv., "Land and Sea in the Past," are especially interesting, and will delight any youth having a spark of imagination. The book is capitally illustrated and attractively got up. We hope that the names of the fossils pictured will be given in future editions. Without names they cannot easily be spoken of, or asked for at a museum. Moreover, the idea that a long word scares a beginner is by no means always correct.

"An Introduction to Geology" (2) is less a textbook than a series of little essays on various subjects of geological interest. Into some of these it goes in considerable though not technical detail. The author's style is fresh and attractive, and his examples of geological processes and photographic illustrations are noticeably unhackneyed. Chapter ii., "Denudation and Deposition of the Present Time," and chapter vii., "The Connection between Geology and Scenery," may be mentioned as particularly useful, but the whole book is of outstanding interest and value.

"Geological Excursions Round London" (3) gives just the details of equipment and the practical tips which make all the difference between success and failure in field work. Twelve excursions in the London Basin, ten in the Weald, and four beyond the Chilterns are outlined with full particulars of train service, walking distances, where to turn to the right and where to the left, and so forth, and—above all—descriptions of the outcrops and hints on the collection of specimens. A coloured geological map of the south-east of England as a frontispiece, and an abundance of diagrams, sections, and photographs in the text, add to the value of a thoroughly helpful little book. Some such guide to every part of the country is much to be desired.

"Minerals and the Microscope" (4) will be indispensable to any young student who, having laid hands on a set of rock sections and a petrological microscope (or even an ordinary microscope fitted with a polariser and analyser) has had his interest fired by the lovely colour-effects they afford. The book forms an admirable introduction to petrology, and is enriched by twelve beautiful plates from photographs showing the microscopic appearance of the principal minerals.

Nos. (5), (6), and (7) of this list of books are of a more severely technical character, and in most schools will probably be used for reference only. They are all standard works by authorities, and the last on the list contains a large number of excellent photomicrographs.

In school geology, as in all other branches of "nature-study," successful work depends on the pupil's personal contact with the thing studied. Books at their best can be no more than a guide and a means of checking results obtained in practical exercises.

RECENT SCHOOL BOOKS AND APPARATUS.

Modern Languages.

A French Phonetic Reader. By Paul Passy. xi+42 pp. (University of London Press.) 2s. net.—"This little book is intended for the use of English people desirous of acquiring a good pronunciation of French." Twenty-one pages of transcribed text certainly makes a very little book for the purpose; Mr. Egan's "German Phonetic Reader" in the same series is much longer. M. Passy gives us four passages in "slow

conversational pronunciation," two in "careful pronunciation" (an unhappy adjective—for M. Passy would not call the other pronunciation "careless"), one in "oratorical pronunciation," and one in "rapid colloquial pronunciation." In a brief introduction the main phonetic differences between the styles of speech are stated; and there is a vocabulary in which the phonetic form is given first, then the conventional spelling, and an English rendering. "As a rule only one form of any word is given"; a concordance would have been much more valuable. Further, there should be full annotation, and the lines should be numbered for ready reference. For one who has made some progress in phonetics the transcriptions will be full of interest, particularly as regards stressing and liaison; but it is emphatically not a beginner's book, in spite of the rather childish character of some of the extracts. Most of our teachers rightly prefer the "careful pronunciation" for teaching purposes, and the two extracts in this style take up only three pages of text.

A Manual of French Composition. By R. L. Græme Ritchie and J. M. Moore. x+275 pp. (Cambridge University Press.) 7s. 6d. net.—This manual, intended "for universities and the higher classes of schools," is good to look upon: a fine large page, good type, a dignified binding; yet we ask ourselves who (in war time!) is going to pay the price demanded. The pecuniary aspect is no direct concern of ours, and we are quite ready to say that the book is worth the money; we only regret that so few will be able to use it. It is, indeed, a fine scholarly piece of work. There is an admirable introduction, culminating in model lessons, which consist of detailed translations of four passages, and make us wish for more. Then there are 104 well-chosen passages for translation into French, classified under eight headings; and, lastly, thirteen model translations contributed by seven distinguished French teachers. In many cases brief suggestive notes have been added to the passages for translation. We congratulate the authors on their achievement; they are fully justified in claiming that it "constitutes a new departure in French composition"; no teacher who does higher work in French can study it without profiting greatly.

A Primer of Practice on the Four French Conjugations. By Henrietta M. Arthur. xiv+50 pp. (Bell.) 6d. net.—Strictly speaking there should be no need for an "extra" of this kind in our teaching; the first course should afford ample opportunity for practising the verbs. But if such supplementary aid is required, this little book will serve the purpose well, in the case of those who still go in for translating in the early stages. It would have been well if more care had been taken to give only sentences complete in sense. There is something unreal in saying "You are receiving," or in asking "Do you like? Combien perdez-vous? Recevez-vous beaucoup? Pourquoi ne punissons-nous pas?" The omission of the *passé historique* (or *défini*, as it is still called here) is to be regretted. It is true that it has "fallen into disuse as a conversational tense," but our pupils write as well as talk, and for narratives they need the *passé historique*.

Classics.

Roman Ideas of Deity in the Last Century before the Christian Era. By W. Warde Fowler. vii+167 pp. (Macmillan.) 5s. net.—All students of Roman thought must be glad that these six lectures, delivered in Oxford for the common university fund, have been published in book form. After some preliminary remarks in which the "De Natura Deorum"

is dismissed as being of slight evidence for any genuine feeling on Cicero's part, the first lecture deals with the domestic deities, with the domestic cults of Vesta, the Penates, Genius, and the dead of the family, wherein Mr. Warde Fowler very justly discerns "an antidote of some value against a degraded polytheism." It is true that the Romans and Italians were interested in the cult itself rather than in any theological idea of deity; but in the second lecture—in some ways the most entrancing part of the book—we are treated to an examination of the various aspects of the worship of Jupiter as the deity of heaven, good faith, and especially of oaths, as implying a background of monotheism. The third lecture deals with cosmic ideas of deity, with sun-worship in particular—this becomes more important later—and contains some interesting remarks on Fortuna, which in Lucretius is almost equivalent to "rerum natura," is something of a moral force in Virgil, and must be distinguished from the use of the word by Cicero as pure chance. Mr. Warde Fowler sees in it a power "very close to the Stoic *εὐαγγελία*"; it was used by writers like Polybius very much as "evolution" is often used by modern historians, to express the natural course of events, without any very definite or technical meaning."

The fourth lecture on the rise of the idea of the man-god leads up to the fifth on the deification of Cæsar. The Roman idea of deity was essentially bound up with some conception of the State; it was that of some power without which "*fides, iustitia, societas generis humani* would all go to pieces." This, coupled with a development of the idea of Genius, helps us to see in Cæsar-worship something more than mere flattery, something which, although, as Mr. Warde Fowler insists, alien to Italian ideas of deity, could naturally spring up from the conviction that there was a germ of the divine in great men. Of course, Hellenistic influence helped. The last lecture deals with the degradation of the idea in the Augustan age, and concludes with an account of the attitude of the chief Augustan writers to religion and the gods. Here we could wish that Mr. Warde Fowler had dealt with Virgil at greater length, not with the machinery of his Olympic gods, but with that in Virgil which makes us feel the more often we read him that he is pre-eminently the religious poet of Rome. Nevertheless the book is in every way a worthy successor to the works which Mr. Warde Fowler has already given us on similar themes. There is a misprint on p. 149 in a quotation from Horace.

A Latin Note-book. Arranged by C. E. Hodges. 127 pp. (Cambridge University Press.) 2s.—It has long been the practice of Continental teachers to make their pupils compose their own language notebooks, and they have been copied by teachers of modern languages here. And now comes one for Latin. There can be no difference of opinion as to the value of making a boy compose, as it were, his own grammar and syntax; the only difficulty lies in the arrangement of the material accumulated. But Mr. Hodges here gives us a neatly tabulated note-book with a place for everything, so that any point may easily be referred to. Some will think that too much has been done in the articulation of compartments, but any teacher may neglect what displeases him. We are much pleased to see that long vowels (including hidden quantities) have been marked. Accuracy in such a matter is difficult to attain, as those alone know who have tried, and a cursory glance through reveals the following errors:—*Semi* (p. 35), *fidei* (57), *vos* (59), *recte* (62), *naturae* (66), *non* (79), *maximus* (69), *navem* (114), *Romānus* (121).

English.

An Outline of Russian Literature. By M. Baring. 250 pp. (Home University Library.) (Williams and Norgate.) 1s. net.—Mr. Baring is known as a critic with strong likes and dislikes of Russian writers; and Phelps has criticised our critic. Here we have a full account of the important writers, from Pushkin to Andrej; but we should have welcomed some sign of a bibliography and plenty of quotation, though it were but scrappy; the writer, who knows Russian, could have done it for us. The preface insists that, until more translation is available, we cannot be said to have scratched the outside of Russian work; all the more need is there for a list of English and French translations. The remarkable fact that a great literature could perfect itself in a hundred years, while American literature has scarcely begun, is but mentioned, and no attempt is made to explain Russia's defiance of all critical rules. A very fine statement of Dostoyevsky's greatness is given on pp. 220-224; but the scene in the inn, where Marmeladof delivers the writer's message, a scene standing almost alone in literature, is not referred to.

Pinocchio, the Tale of a Puppet. By Carlo Lorenzini. 128 pp. (Dent.) 1s. 6d.

The Mermaid and other Tales. By Andersen. 128 pp. (Dent.) 1s. 6d.

Robinson Crusoe. 128 pp. (Dent.) 1s. 6d.

Sinbad and other Tales. (Dent.) 1s. 6d.

Feats on the Fjords. By Harriet Marineau. 128 pp. (Dent.) 1s. 6d.

Water Babies. 128 pp. (Dent.) 1s. 6d.

This excellent series, daintily illustrated and beautifully bound and printed, has been noticed before; the illustrators are Miss Curtis, Miss Tarrant, Mr. Arthur Rackham, Mr. Symington, Mr. Armfield, and Mr. Folkard. The books are under the general editorship of Mr. F. C. Tilney, and may be as well recommended as their predecessors. They form an ideal bookshelf-full for any young people, and can but increase the respect that boys and girls should learn for books that are books.

The Book of the Blue Sea. By Sir Henry Newbolt. 307 pp. (Longmans.) 5s. net.—This is a record of true adventures, and aims at giving a full account of midshipmen's lives during the great development of armoured ships and modern fighting out of the frigate actions of our grandfathers' time. The stories of Charles, Basil, John Franklin, Edward Pellew, and David Farragut take us all over the world; the book reads like a very interesting history-book, and contains eight full-page illustrations. It is needless to comment on the way the story is told when Sir Henry Newbolt has the telling.

Patriotic Poetry. Pro Patria. Compiled by W. J. Halliday. 220 pp. (Dent.) 2s. 6d.

Patriotic Sketch for Dramatic Performance. Britannia's Revue. By Gladys Robinson. 12 pp. (Sheffield: Leng.) 7d.

The Salute of the Flag. Songs compiled by P. E. Scholes, and Patriotic Songs. (Patriotic Publishing Co.) 1d. each.

The Debt. By E. V. Lucas. (Methuen.) 1d.

For the Men at the Front. Words and music. (Methuen.) 1d.

Not for any particularly poetic fervour or genius are these books and booklets to be noted, but because at this time anything that will tend to awaken a recognition of responsibility even in the young is not to be lightly passed by. The volume "Pro Patria" contains many old friends, and a good deal that is new. The new part is not always to be judged as though it were intended for the critic solely, and some of the

verse halts; but halting verse has often accomplished what is beyond the power of the very best. Besides, we have here Kipling's "Children's Song," and some of Miss Letts' beautiful verse, and bits from Gilbert Cannan and "Who fears to speak of Ninety-eight?" Indeed, the latter part of the book is full of unhackneyed pieces. The booklets are various. Miss Robinson's "Revue" may be easily acted; the proceeds of the sale of it go to the Red Cross. It possesses great chances for the school that would combine a bit of dramatic work with a patriotic effort. Mr. E. V. Lucas's poem, "The Debt," reprinted from the *Sphere*, is sad but true. "For the Men at the Front" has already gained great popularity; the words are by Mr. Oxenham and the music by Dr. Dykes; it is printed post-card form. The same writer has reprinted "Policeman X." (the Kaiser) with an Epilogue, the original poem, which is striking, having been written in 1898. Mr. Scholes's songs are quite stirring; the "Salute of the Flag" is more suitable for schools than the accompanying Patriotic Songs.

The Plain-text Shakespeare: Henry IV., Much Ado, Henry VIII., King John. (The Clarendon Press.) 6d. each.

Bell's Shakespeare for Schools. Edited by S. Mais. Tempest, Coriolanus, Henry IV. (two parts), Lear, Merchant of Venice. (Bell.) 1s. each.

More School Shakespeares, but both are welcome. The "Plain-text" is carefully expurgated, has no notes, is well printed, and is of convenient size; the Bell's shilling plays are not so well printed; but they have breezy prefaces, a few suitable notes and hints, and, above all, a set of illustrations by Mr. Byam Shaw. These suffer by their size, but, like all Mr. Shaw's work, they are most spirited and bold and are quite unlike the generality of pictures inserted in school drama books. Mr. Mais, the editor, is a humorist, and his evident interest in his work and in teaching should communicate itself to those who use his edition.

History.

The Cambridge History of English Literature. Vol. xi. 523 pp. (Cambridge University Press.) 9s. net.—This great history goes on, and we are informed that when it is finished an extra couple of volumes will deal with illustrative extracts and a further two with American literature. Completed, it will form a mine of reference, and indeed its bibliographies are a delight to the weary searcher for additional guidance. This section takes in the period of the French Revolution, and, among much else that is interesting, there are chapters on Cowper, Wordsworth, Coleridge, Crabbe, Blake, Burns, book-production, and children's books. The last two, in the catholic manner which has distinguished the whole work, are rather apart from the main stream, and we can only wish that a chapter at least had been, or could be, devoted to those formative books which are in danger of being forgotten. Because the critical world has decided to forget the books that led it to literature that is no reason why a history should cold-shoulder them; and, as we have said before in these pages, until the claims of such books are recognised, the history of a people's literature is not written. It is most interesting to collect the chance references in Jane Austen, Miss Ferrier, Scott's "Journals," Howells's confidences, to the books that held and had we know not how much influence on mental development. In the present pages, we are glad to see the constant moralising which besets our literature politely condemned, and we fancy we detect a note of revolt against one or two -olatrics. The "Ancient Mariner" is dealt with, as always, in a cursory manner; but Cowper's letters receive the meed

which must be modified when the names of Howell and Lady Mary are spoken of. Perhaps Pliny alone wrote for posterity as if writing familiarly. Cobbett and Tom Paine have hard measure dealt them; we cannot live their hatreds again, though the hatreds are obscurely with us, and are noteworthy. When the volumes giving illustrations appear we hope the children's book will not be forgotten. The whole volume maintains the wonderful standard set up.

The Training of a Sovereign. By Viscount Esher. xiv+354 pp. (Murray.) 5s. net.—We are gradually learning more and more of the life of Queen Victoria, a Sovereign whom it is strange for some of us to realise is beyond the memory of most of our pupils, and of whom it is therefore necessary to teach them as of her predecessors. This book is an abridgment of an earlier entitled "The Girlhood of Queen Victoria," and consisting of her diaries between 1832 and 1840. After an introduction of some thirty pages, the selections are given in the Queen's own words, and it is interesting to read how Lord Melbourne, the Prime Minister of those years, initiated his royal mistress into the task of governing her empire. She regarded him as a friend in the fullest sense of the word, and he talked with her, not only of politics, but of art, literature, and past history, both recent and earlier. The reader will require some knowledge of the history of the times though the abundant notes help with information not easily obtainable. There are seven portraits and an index.

Kings of Then and Now. By E. L. Elias. 64 pp. (Macmillan.) 3d.—This is one of a series called "then and now stories," and is intended for the very little ones. There is not much history in the strict sense of the word, but it is pleasantly written, and will at least serve to give its readers some idea of the six English kings who are presented.

Our Outlook as Changed by the War. By A. Gardner. 15 pp. (Cambridge: Heffer.) 2d. net.—A thoughtful paper read by Miss Gardner in Newnham College on a Sunday last October, in which she speaks seriously of our shattered ideals as to lasting peace and security, and of the different values which our previous studies seem to have in the present stress. She gives sound advice as to the course of our lives meanwhile, and has some wise thoughts as to the future international position and the condition of religion when the war is over.

The Partition of Europe. By P. Guedalla. vii+311 pp. (Oxford: Clarendon Press.) 4s. 6d.—This is a text-book of European history, 1715-1815, and the title has been chosen (for want of a better) because that century saw a "continuous process of partition." The author regards "history as the most interesting part of geography," and accordingly bases his narrative on the political geography, supplementing it with seven maps at the end of the book. It is a manual, but written not merely as a compilation. Without introducing much new matter above the ordinary text-book, there is an originality in the treatment of the whole subject, which makes it desirable to read even for those who know something of the story already. There is a short chronological summary of events as well as seven genealogical tables.

Historical Ballads. Edited by W. Macdougall. viii+136 pp. (Bell.) 1s.—Here is a selection of some forty ballads illustrative of British history of various periods; each has a brief introduction, and there is at the end a glossary of obsolete and peculiar words. The book will be useful as a supplement to the class teaching, but the author would have made it more useful if the glossary had been distributed where it

was wanted, and if some indication had been given as to the date of the pieces, so that we might distinguish at least between contemporary ballads and literary productions of a later age.

Geography.

Geographical Exercise Books. I. *The British Isles*; II. *Europe*; III. *The British Empire.* With questions by B. C. Wallis. (Macmillan.) 6d. each.—In this series of exercise books Mr. Wallis has made a most successful attempt to help both teachers and pupils in their geographical work. Each of the books contains twenty-two maps. Each map fills a left-hand page, and opposite it is a set of questions which can be answered in most cases on the given map. At the end of each book there are a few useful statistical tables. Throughout the series the maps are exceedingly well drawn; the maps of Wales, Mediterranean, and others are drawn in bold outline, while the river maps (Rhine, Danube, Nile, etc.) show only the main stream and important tributaries. The relief maps have well-chosen contours; on the map of the Alps the contours, although necessarily close together, are nevertheless very clear. The exercises have been prepared with much care and thought, and the author evidently intends them to be used in conjunction with oral teaching and with suitable atlases and text-books. The exercises include questions on topography, relief, occupations, communication, population, and many other subjects. In a few instances the questions are of doubtful value, such as the marking on a map of Ireland the boundaries of Ulster, Leinster, Munster, and Connaught. In the exercises, however, teachers will find many useful suggestions for their lessons; in working the exercises pupils will be trained in a systematic way to enter on maps what they have learnt in the geography lesson. At the end of the course the completed exercises will form a valuable record of the work done, and will be most useful for purposes of revision.

The Oxford Geographies. A Geography of Australasia. By Griffith Taylor. Pp. 176, maps and diagrams. (Oxford: Clarendon Press.) 1s. 6d.—This descriptive geography of Australia, from a physiographic and regional point of view, fits in well with the other books of the series to which it belongs. Mr. Griffith Taylor's connection with Australia is a guarantee of the accuracy of his facts. Figs. 25, 26, and 42 are too complicated for a school text-book.

Bacon's Contour Atlas. South-east England edition. 36 maps. (Bacon.) 6d.—This good cheap atlas is re-issued with four special maps showing the geographical features of south-east England, south of Birmingham and east of Bristol. The maps are clear, but there are still many names which are valueless for school purposes. Why should the atlas not indicate the relative unimportance of a district by an absence of place-names?

Black's Travel Pictures. Selected and edited by R. J. Finch. (i) *Countries of the Great War*; (ii) *The Mediterranean*; (iii) *The British Isles*; (iv) *Asia*. (Black.) 10d. each set.—Since we noticed favourably a set of these travel pictures, we have tested them with a class in school. The children were delighted, not only with the twenty-four coloured pictures, but also with the photographs; they were stimulated to ask many intelligent questions; and when tested as to the vividness of the impression which they had obtained, they showed by the quality of the results of the test how useful the pictures had been; they were also keen upon the location of each picture on the map on

the cover of the book. The new issues should improve the value of this useful series.

Geographical Readers. (i) *Little Travellers Abroad*. (ii) *Lands Far and Near*. 112 and 120 pp; illustrations, some in colour. (Oliver and Boyd.) 10d. each.—The basis of a beginner's geography book lies very largely in its illustrations, which are excellently chosen and reproduced in these small volumes. We imagine that many children will read these books with interest, and that some will strenuously object to putting them aside until they have read them through.

Mathematics.

Geometry of Four Dimensions. By H. P. Manning. ix+348 pp. (The Macmillan Co.) 8s. 6d. net.—Although geometry of more than three dimensions is now recognised to be an essential part of mathematics having direct applications to mathematical physics, its study dates only from the first part of the last century. It has been treated both from the synthetic and the analytic side. Of these the analytic may seem to present less difficulty, as we follow the development of well-understood algebraic processes. The synthetic method, on the other hand, requires us to break away from intuition, and we lack the assistance we derive in geometry of three dimensions from the contemplation of models. The work before us is concerned with the synthetic treatment of four-dimensional geometry. The validity of the theorems depends solely upon the logical accuracy of the reasoning, and it can be developed without waiting for a realisation of the geometry. The method adopted is to define the properties of each space of n dimensions in terms of those of $n-1$ dimensions. In this way we arrive at the pentahedroid, which in four-dimensional space plays the same part that the tetrahedron and triangle do in the corresponding lower spaces. The reader will find, in addition, discussions of angles of higher order, hyperpyramids, hypercones, hyperspheres, Euclidean geometry, measurement of volume and hypervolume, and regular polyhedroids. We think he will find the presentation of the subject very clear and interesting, and by the time he arrives at the construction of the 600-hedroid he may think himself able to imagine some of the aspects of this suprasensual world. There is a full index and a dictionary of technical terms.

Statics. Part i. By R. C. Fawdry. viii+165 pp. (Bell.) 2s. 6d.—The aim of the writer of this book has been to provide a course of mechanics suitable for the non-specialists in mathematics, keeping specially in view those reading for the Army and students of engineering. Practical work, consequently, takes a prominent place. It is interesting to notice that the historical order of development of the subject is being found to be also an order suitable for teaching the subject when practical work is combined with theory. Thus, chapter i. is devoted to the lever and chapter ii. to the classical machines. Here, as elsewhere throughout the book, short notes on the history of the subject are inserted, and will show the pupils that the problems they are asked to consider have been regarded as worthy of investigation for a period of more than two thousand years, and are not the tiresome inventions of some modern pedant. We are glad to see that the vector concept and notation are used in dealing with the parallelogram of forces. The examples are mainly numerical, and require only a very elementary knowledge of trigonometry. There are also directions for performing laboratory experiments.

The Propagation of Disturbances in Dispersive Media. (Cambridge Tracts, No. 17.) By T. H.

Havelock. viii+87 pp. (Cambridge University Press.) 3s. 6d. net.—The bibliography appended to this tract bears striking witness to the leading part played by British mathematicians in the development of mathematical physics. The study of groups of waves was really initiated by Hamilton in 1839, but his work was neglected, and it was not until the 'seventies when Stokes, Reynolds, and Rayleigh published papers dealing with the subject that mathematicians began to turn their attention to it. The aim of the tract is to collect the main results of research on wave groups in general and its connection with optical, electric, elastic, and hydrodynamical phenomena. Thus the second and fifth chapters deal with the velocity of light and the action of a prism upon white light respectively. The discussion in the former of these chapters makes it fairly evident that the usual experimental methods of determining the velocity of light, yield not the phase velocity, but the group velocity. In the third and fourth chapters some account is given of Lord Kelvin's researches on groups of water-waves, and reference is also made to the later work of Prof. Lamb. The sixth chapter discusses the flow of energy in dispersive media, and the last the propagation of wave-fronts with discontinuities. Written by one who himself has made valuable additions to the theory, the tract will be welcomed by mathematicians and physicists.

Science and Technology.

School Laboratories. Published by the Association of Science Teachers. Price to non-members, 1s.—The association—which is a development of a branch of the Assistant-mistresses' Association—deserves commendation for publishing this useful pamphlet. Four types of laboratory, viz., for chemistry, physics, botany, and for general science—are described in detail by experienced teachers; and in each case a plan, drawn to scale, is added. In main features the equipment described would prove to be quite efficient; and it is only in details that the opinion of other teachers would differ. We have space for a few suggestions only. Thus, in the plan for a chemical laboratory designed for twenty-four students, some teachers will consider seventeen yards is excessive for the length of tables specially for balances. It may be assumed that earthenware pipes with luted joints are intended to be used for bench drainage; these occupy an undue amount of space, and the lutings frequently give way. Lead piping occupies less space, and it can be used quite safely. It should be erected in suitable short lengths, joined by expansion joints, so that the whole system can be removed and re-erected without any cutting.

In the design for a physics laboratory, one of the balance tables might be dispensed with, and the wall space left free for experimental work. Such wall space, especially if covered with flat wood panelling to a height of about 8 ft., is useful to suspend things from. At least one of the benches should have a raised edge round it, so as to adapt it for experiments requiring mercury. The gas supply would be simplified if each bench had three two-way gas taps instead of six single taps, and some of the benches should have a water supply, and for drainage a shallow sloping trough (lined with block tin or copper) at the back of the bench. These remarks, however, indicate only the present writer's opinion; and any other equally experienced teacher may regard them as wrong.

The British Journal Photographic Almanac (1915). Edited by G. E. Brown. 1060 pp. (Greenwood.) 1s.; cloth, 2s.—Every serious photographer, professional and amateur, ought to have a copy of this almanac. It contains full information concern-

ing all well-known methods of manipulation and procedure, together with instructions on the more recent methods published in various recognised periodicals during the past year. There are also two special articles on "Modern Methods of Enlarging" and on "Photography with the Microscope"; the latter article is remarkably complete, and it might well form a separate text-book on the subject of photomicrography. Technical information constitutes about 370 pages of the volume, the remaining pages being trade advertisements—which, in themselves, are often useful for reference. We congratulate the editor on this fifty-fourth annual volume, and the large edition of 30,000 copies ought to find a ready sale.

Notes on Practical Physics. By Prof. C. G. Barkla and G. A. Carse. 113 pp. (Gurney and Jackson.) 3s. 6d. net.—These are the notes primarily written for the use of students attending the junior physics class in Edinburgh University. The notes consist of main facts and suggestions, but detailed description of apparatus and procedure are avoided. The course covers all branches of physics, and the selection of experiments is quite comprehensive and satisfactory. For the benefit of more advanced students, a special chapter on the treatment of observations and determination of error is added; this is a useful addition, as it emphasises a matter which is often neglected in the less advanced text-books on practical physics.

Miscellaneous.

A Course in Music for Public and Secondary Schools. By Dr. Robert T. White. (Cambridge University Press.) 4s. 6d.—In writing this book the author has had in mind, among other students, the boys in the upper forms of secondary schools, who for physiological reasons have been compelled to give up class-singing, and in many cases have ceased to have further systematic instruction in the subject. He realises that the future of music as a progressive art is as much dependent upon creating intelligent audiences as training competent performers, and that this neglect of the musical training of boys is one of the tragedies of their education. The "course" is intended to remedy this neglect. Indeed, the elements of music are so lucidly, simply, and unconventionally explained that a boy with an average faculty for music could follow the course by himself, and find it both improving and fascinating. Bearing in mind the fact that he wishes to create intelligent audiences, the author has devoted the greater part of the course to rhythm, melody, and form, and special prominence has been given to the training of the inventive faculty. Exercises which develop and train the originality and individuality of the pupil are a special feature of the book. As a treatise on how to teach the subject the course is admirable and should be in the hands of every teacher of the subject.

EDUCATIONAL BOOKS PUBLISHED DURING JANUARY, 1915.

(Compiled from information provided by the Publishers.)

Modern Languages.

"Progressive French Composition." By Marie F. Krasser and Lina Morrison. 78 pp. (Blackie.) 1s. Erckmann-Chatrian, "Madame Thérèse." With Introduction and Notes. Edited by Arthur R. Ropes. xvi+280 pp.+1 map. (Cambridge University Press.) Price reduced from 3s. to 2s.

"L'Homme au Masque de Fer. Recit tiré du Vicomte de Bragelonne. Roman d'Alexandre Dumas." Edited by E. A. Robertson. viii+90 pp. (Cambridge University Press.) 1s. 6d.

"The Modern Language Review." Volume x., No. 1. 130 pp. (Cambridge University Press.) 4s. net.

"Russian Grammar." By Nevill Forbes. 244 pp. (Clarendon Press.) 6s. net.

Oxford Junior German Series:—Klassmann, "Wolfdietrich." Edited by H. E. Adams. 62 pp. Dehmel, "Das Grüne Haus." Edited by C. R. Ash. 82 pp. Liliencron, "Umzingelt und Richtungspunkt: Zwei Kriegsnovellen." Edited by A. M. D. Hughes. 96 pp. (Clarendon Press.) 1s. 6d. each.

"Vade Mecum for the Use of Officers and Interpreters: a Comprehensive List of French and English Technical and Military Terms." By E. Plumon. 136 pp. (Hachette.) 2s.

"Graduated Practice in Free French Composition." By E. T. Schoedelin. 184 pp. (Hachette.) 2s.

"George Sand: La Petite Fadette." Edited by F. W. M. Draper. 264 pp. (Hachette.) 2s.

"Andersen: Ten Fairy Tales." Edited by Aloys Weiss. 302 pp. (Hachette.) 2s.

"Reineke Fuchs." By A. J. Ulrich. Illustrated in black and white. 64 pp. (Hachette.) 1s. 6d.

"The Soldier's Word and Phrase Book: English, French, German, with Pronunciation." Compiled by a Committee of well-known Teachers from actual experience of soldiers' needs. 88 pp. (Harrap.) 6d. net, waterproof cover.

"Lectures Historiques." By E. Moffet. 264 pp. (Harrap.) 2s.; 2s. 6d. with vocabulary.

Molière: "Les Fourberies de Scapin." Edited by Kenneth Mackenzie. 107 pp. (Heath.) 1s. 3d.

"Erstes Deutsches Lesebuch." By Martin Schimidhofer. 176 pp. (Heath.) 2s.

"The Soldier's Language Manual: No. 2, English-German." By Ajax. 26 pp. (Marlborough.) Wrapper, 3d.

"A Simple French Song and Play Book." By Montague Fordham. 30 pp. (Marlborough.) Wrapper, 3d.

"Le Français par l'exemple et les textes." En six livres. Par C. E. Albert Bonne. Livre ii. 216 pp. Le plan suivi est le même que celui adopté dans le premier livre. Les phrases détachées y sont remplacées par des passages suivis. Les difficultés grammaticales sont présentées graduellement. (Rivington.) 1s. 4d.

Classics.

"Via Romana." By Frank Granger. 132 pp. (Bell.) 1s. 6d. net.

Plato: "The Apology of Socrates." Edited by Adela M. Adam. (Cambridge Elementary Classics.) xx+110 pp., frontispiece. (Cambridge University Press.) 2s. 6d.

"The Odyssey of Homer." Books vi. and vii., with notes and vocabulary. Edited by G. M. Edwards. (Cambridge Elementary Classics.) xviii+72 pp.+7 illustrations. (Cambridge University Press.) 2s.

"L. Annaei Senecae Dialogorum Libri x. xi., xii.": Three Dialogues of Seneca. Edited by J. D. Duff. ix+312 pp. (Cambridge University Press.) 4s. net.

"Greek Exercises." By E. E. Bryant and E. D. C. Lake. 68 pp. (Clarendon Press.) 2s.

English: Grammar, Composition, Literature.

Shakespeare for Schools:—"Henry IV." Part i. 130 pp. Part ii. 146 pp. "Coriolanus." 101 pp. "King Lear." 160 pp. "Merchant of Venice." 115

pp. "Tempest." 100 pp. Edited by S. P. B. Mais. (Bell.) 1s. each.

"Blackie's New Systematic English Readers." Book iv. 240 pp. 1s. 5d. Book v. 264 pp. 1s. 9d. (Blackie.)

"The Granta Shakespeare: Second Part of King Henry IV." Edited by J. H. Lobban. xxiv + 192 pp. + frontispiece. (Cambridge University Press.) 1s.

Chaucer: "The Nonnè Prestes Tale." Edited by Lilian Winstanley. (Pitt Press Series.) lxxxviii. + 44 pp. (Cambridge University Press.) 2s.

Abraham Cowley: "The Essays and other Prose Writings." Edited, with introduction, etc., by A. B. Gough. 406 pp. (Clarendon Press.) 4s. 6d.

"Practical English Composition" (Gerrish and Cunningham). Adapted and edited for English schools by E. W. Edmunds. 320 pp. (Harrap.) 2s. 6d.

"Great Names in English Literature." Vol. ii., Dryden to Burke. By Edith L. Elias. 192 pp. (Harrap.) 1s. 3d.

"The Greyfriars Book of English Verse." Selected and arranged for the use of Junior Forms. By Guy Kendall. With an introduction by Frank Fletcher. xii + 172 pp. (Longmans.) 2s.

"English Letters Selected for Reading in Schools." By H. J. Anderson. (Longmans' Class Books of English Literature.) viii + 136 pp. (Longmans.) 1s. 6d.

Carlyle: Abbot Samson: Chapters from "Past and Present." Edited by F. A. Cavenagh. 146 pp. (Macmillan.) 1s.

"A Book of Northern Heroes." By A. J. Dicks. 163 pp. (Ralph, Holland.) 1s.

"Follow the Flag." (Patriotic Reader.) By C. T. Hallett. 140 pp. (Relfe.) Limp cloth, 10d.; cloth boards, 1s.

History.

"The War, its Origins and Warnings." By F. J. Adkins. 227 pp. (Allen and Unwin.) 2s. 6d. net.

"The British Empire and the United States." By W. A. Dunning. 381 pp. (Allen and Unwin.) 8s. 6d. net.

"Germany, France, Russia, and Islam." By Prof. von Treitschke. 327 pp. (Allen and Unwin.) 7s. 6d. net.

"A History of the Ancient World." By Hutton Webster. Edited for English Schools by J. B. Chapman. 650 pp. (Harrap.) 6s. net.

"Great Cities of the World: Calcutta." (McDougall.) Paper, 2d.; cloth, 3d. each. "Great Cities of the World: London." (McDougall.) Paper, 2d.; cloth, 3d. each.

"How to Teach American History." By John W. Wayland. 362 pp. (Macmillan.) 5s. net.

"History Made Easy." An Epitome of English History for the Public Examinations. Revised edition. By John Gibson. 191 pp. (Murby.) 1s. 6d. net.

"A General History of Europe from the French Revolution to the end of the Nineteenth Century (1789-1900 A.D.)." By Oliver J. Thatcher and Ferdinand Schwill. Edited and adapted by Arthur Hassall. 128 pp. (with 3 coloured maps). (John Murray.) 2s. 6d.

Geography.

"In Many Lands." Two parts. By S. Gibson. Part i., 136 pp. Part ii., 136 pp. (Bell.) 1s. each.

"Asia in Pictures." By H. Clive Barnard. 64 pp. crown quarto; 32 illustrations in colour and 33 in black and white. (Black.) 1s. 6d.

"Physical Geography." By Philip Lake. xx +

324 pp.; with 20 plates, 162 text-figures, 7 maps. (Cambridge University Press.) 7s. 6d. net.

Oxford Outline Maps:—"Eastern Germany and Poland: Rivers." "Rhine Basin: Political." "Rhine Basin: Rivers." "Rhine and Seine Basins: Political." "Rhine and Seine Basins: Rivers." "Belgium, Luxemburg and N.E. France: Political." "Belgium, Luxemburg, and N.E. France: Rivers." "The Danube Lands: Political." The Danube Lands: Rivers." Edited by Prof. A. J. Herbertson. (Clarendon Press.) 1d. net each; 9d. net for 12 of one kind; 1s. 4d. net for 25 of one kind.

"War Map of Central Europe." By B. V. Darbishire. 30 in. x 20 in. (Oxford University Press.) 3d. net.

"An Atlas of Economic Geography." With introduction by Prof. L. W. Lyde. 68 pp. of letterpress and 96 pp. of coloured maps. (Oxford University Press.) 5s. net; with introduction interleaved, 6s. net.

"A First Book of Commercial Geography." By T. Alford Smith. 160 pp. (Macmillan.) 1s. 6d.

Macmillan's Geographical Exercise Books:—III. "The British Empire." With questions by B. C. Wallis. 48 pp. (Macmillan.) 6d.

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"A Shilling Arithmetic." By W. M. Baker and A. A. Bourne. 192 pp. (Bell.) 1s.; 1s. 4d. with Answers.

"A Treatise on the Analytic Geometry of Three Dimensions." By George Salmon. Revised by Reginald A. P. Rogers. New edition. Vol. II. Svo. xvi + 334 pp. (Longmans.) 7s. 6d.

"Exercises in Algebra (including Trigonometry)." By Prof. T. Percy Nunn. (Longmans' Modern Mathematical Series.) Part ii. xii + 514 pp. 6s. With answers. xii + 552 pp. 6s. 6d. (Longmans.)

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"Calculus Made Easy." By F. R. S. Second edition. 278 pp. (Macmillan.) 2s. net.

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Science and Technology.

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"The Principles of Understanding." By Henry Sturt. An introduction to logic from the standpoint of idealism. xiv+302 pp. (Cambridge University Press.) 5s. net.

"The Education of Karl Witte: or, The Training of the Child." Translated by Prof. Leo Werner. 350 pp. (Harrap.) 4s. 6d. net.

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"Four Lectures on Art, having Reference to Exhibits in the Municipal Art Gallery." By A. Edmund Gyngell. viii+120 pp. (Longmans.) 1s. net.

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"McDougall's Patriotic Song Book." (McDougall.) Tonic Sol-fa, 1d.; Staff, 1½d.; Pianoforte, Edinburgh, 1s.

CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising any article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.

Examinations and Practical Tests.

THERE has been enough destructive criticism and to spare of Circular 849. Now destructive criticism of a thorny subject is easy and leads to little. Without constructive, or reconstructive, criticism an attack admits a difficulty and leaves a scheme where it was placed by its framers, who know, perhaps as well as the critics, that their solution is out of the question.

If one scheme has failed, is it impossible to devise another? Let us postulate what seems to be required of examiners for leaving certificates; not an inquiry into laboriously acquired information, but a test of capacity and of individuality. The object of a school is to begin the preparation of boys and girls to take their places in the world as students, as men and women of action and of foresight. It is not given to all to be equally capable. But it is just that credit should be given to every possessor for the differing gifts bestowed in each case. This is naturally not to say that the claimant with one talent can be expected to reach the highest rank.

We begin then at school by fostering the various gifts and qualities of the individual, feeling sure that nearly every pupil has certain qualities, if only they can be discovered. There are few children of wrath. As it is true that: God made the country and man made the town, so it is true that God made the child and examinations make the unsuccessful candidate—unfitted as they are to deal with him, in many cases, as his character demands.

We can now go farther and postulate the object of a leaving certificate, which is: To see how the holder may be qualified to begin a course in the walk of life he chooses, whether that of a bookworm, an architect, or a sailor. We are not now concerned to decide the age at which tests are to be made and a brand affixed; we have but to discuss the manner of choosing the worthy and of rejecting the wastrel.

We must rule out any plan, which, like the scheme outlined in Circular 849, places the bookworm alone on the throne. The present method of estimating worth by means of written tests leads to belittling a boy who at a critical moment saves his detractors from national peril, whether at Mons or elsewhere. But for his country's need he would have remained a despised person, "who could not pass examinations." It makes a boy the Cinderella of a sixth form, who by a bit of luck emancipates himself and becomes a leading consulting physician. It is unable to distinguish merit and elect to a college fellowship the most prominent of *Punch's* many editors. It exalts to high places numbers of mediocrities and submerges a host of capable people, who have not the luck of the three examples just mentioned.

We admit that an Oxford "first in Mods. and Greats" is not always a man of foresight, and that a Cambridge "Smith's prizeman" is rarely a man of action. Still they must not be excluded from any plan, for capabilities of all kinds deserve recognition. To meet every case we must provide a test in literary, mathematical, scientific and practical subjects, not forgetting that personality is of more value than learning and less easily acquired. By practical subjects, we mean, for example:—(1) Music; (2) commercial subjects; (3) drawing; (4) agriculture (5) manual work;

(6) housecraft; (7) military rudiments; (8) swimming, riding; (9) gymnastics, boxing, games, &c. &c.

It would require a pamphlet to present a scheme in full detail. Our wish is to show the possibility of establishing and carrying out such a test as we propose. A test that will brand the mathematician as good for the service in his line, the future merchant as capable of starting on his career, the colonist as having done what circumstances allowed to fit himself for the life he has chosen. But not a test that admits the scholar and rejects a man far more fitted than he to live the complete life. Both men must be reckoned as essential parts of the State, and both will have to be catered for in the school of the near future.

We are encouraged to do this because the Board considers the task of testing "practical" subjects by a written examination impossible. In order to be constructive we will try to show there is little need for written examinations—on a scrap of paper—in some cases, and that in others it is scarcely fair to declare that they do not exist.

We suppose that a leaving examination is a brand to prove that the recipient has worthily pursued certain courses at school. If the subjects set forth on the certificate are those required by any institution as a qualification for entry, that institution must be satisfied under given conditions. It will not be allowed to hold a private test. Even opponents of the suggested scheme will admit that examinations in the bookish subjects can be arranged. (The writer has views on this matter, but withholds them.)

It is the practical group, consisting of subjects outside the sacred area, that is considered too vague to test, and is consequently ruled out by the Board. The answer to the objection is, that most of the subjects named in the list are tested in quite as satisfactory a way as bookish subjects. Indeed bodies simply rival each other in examining practically and otherwise: music, art, and methods of business. After issuing its pamphlet on rural schools the Board cannot protest its inability to estimate the results of what we have called comprehensively "agriculture." The Joint Scholarship Board has in practice a method of testing manual work and housecraft. Proficiency in the cadet corps can be estimated in the way in which awards of certificate A are carried out. Further, the Royal Life Saving Society tests swimming, as Aldershot tests boxing. We may suggest that anyone can tell whether a rider can stick on a horse without a written examination conducted by the Board of Education. Lastly, there are many means of noting excellence in athletics both public and private, which will have been entered, in common with much else, in the new school record.

Thus there need not be any difficulty in appraising worth in practical subjects or in granting a leaving certificate to a boy or girl who shows merit in the necessary number of groups of which, not the least valuable, a "practical" group must be one, that may be taken on equal terms with other groups.

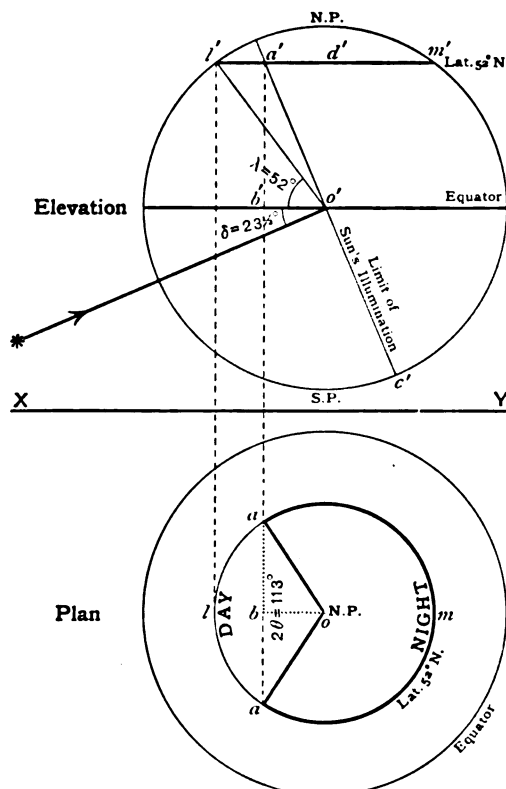
ROOT AND BRANCH.

Graphical Determination of Durations of Day and Night.

THE following graphical method of determining the length of day and of night at any given latitude and date is within the range of boys of upper forms, and provides a useful exercise for the geography lesson. As an example, consider, say, latitude 52° N., and date December 22nd, on which the declination of the sun is $23\frac{1}{2}^{\circ}$ (approx.). Construct an elevation and plan of the earth as shown in the figure. Referring to the elevation, λ is the angle of latitude, δ the angle of declination of the sun, $a'o'c'$ the elevation of the terminator or limit of the sun's illumination of the

earth (at right angles to the line showing the direction of the sun's rays), a' is the point at which the terminator $a'o'c'$ cuts the elevation of the line of latitude 52° N. Referring to the plan, a and a' are the points in plan corresponding to a' in elevation, o is the plan of the polar axis.

It is evident that a place on the circle of latitude 52° N. will receive light while moving along the path represented by the arc, $a l a$ (plan), and be in darkness while moving along the path represented by the arc, $a m a$.



Since these arcs are proportional to the angles they subtend at the centre, we have:—

$$\begin{aligned} \frac{\text{Duration of day}}{\text{Duration of night}} &= \frac{\widehat{a o a}}{\text{reflex } \widehat{a o a}} \\ \text{Duration of day} &= \frac{\widehat{a o a} \text{ in degrees}}{360^{\circ}} \\ \text{or, Total day (24 hours)} &= \frac{360^{\circ}}{360^{\circ}} \end{aligned}$$

In the case taken, $\widehat{a o a} = 113^{\circ}$

Hence, $\frac{\text{Length of day}}{24 \text{ hours}} = \frac{113}{360}$

$$\therefore \text{Length of day} = \frac{113}{360} \times 24$$

$$= 7.53 \text{ hours or } 7 \text{ hours } 32 \text{ minutes.}$$

If the declination is $23\frac{1}{2}^{\circ}$ N., then this is the length of night, and the day is 24h. - 7h. 32m. = 16h. 28m.

Referring to the almanack, the number for London, the latitude of which is not quite 52° N., is given as 16h. 35m. for June 22nd, which shows to some extent the accuracy of the method.

If the plan of the terminator be drawn (the plan is an ellipse), the duration of day, on the same date, at various latitudes can be readily compared. Also, the latitudes at which perpetual day and perpetual night prevail can be shown.

The diagram can be used for finding the approximate time of sunrise and of sunset.

If l (plan) represents the position of a place of latitude, 52° N., at noon, then a and a' represent the positions at sunrise and sunset.

The time to describe arc, $a'l = \frac{106}{15}$ hours

In the case taken $= \frac{56\frac{1}{2}}{15} = 3.8$ hours

The time the sun rises is then $12 - 3.8 = 8.2$ hours or 8 hours 12 minutes.

This agrees with the table given in "Whitaker's Almanack."

No corrections have been applied. A. H. BELL.
Technical Institute, Sheerness.

Old School Books.

MANY of the strangers within our gates are now called alien enemies and kept in concentration camps, the gates of which do not easily open. These camps also contain large numbers of boys of school age (thirteen to seventeen), some of them from wrecked German warships or captured merchantmen. Time hangs heavy on their hands, and idleness is not good for mental hygiene. We understand that there is a great demand for books, either German or English, old magazines, story-books, and *also old school books*. Schools are now being organised in many of these camps. Anyone who would care to assist might write enclosing offers of books to Mr. Robt. Wm. Clark, Emergency Committee for Germans, etc., in Distress, 169, St. Stephen's House, Westminster, S.W., who will advise to which camp books can best be sent.

There are camps at Lancaster, Handforth near Manchester, Queensferry near Chester, Lofthouse near Wakefield, Douglas, Isle of Man, Knockaloe near Peel, Isle of Man, s.s. *Canada* and s.s. *Tunisia*, both at Ryde *via* Portsmouth Harbour, s.s. *Lake Manitoba*, and s.s. *Ascania*, Portsmouth Harbour, s.s. *Royal Edward* and s.s. *Saxonia*, Southend-on-Sea, etc., etc., also a small camp at Hawick. Lancaster and Handforth both contain many boys.

HUGH RICHARDSON.

British Laboratory Ware.

As chairman of the British Laboratory Ware Association I have had my attention directed to a circular letter issued by the British Science Guild dated January, 1915, to schools, colleges, universities, and technical institutes, and also the Circular No. 885 issued by the Board of Education dated January 11th, 1915, which I see was mentioned in THE SCHOOL WORLD, page 68, February, 1915.

These circulars have been issued under a grave misapprehension, and are likely to give a very misleading idea of the present situation in reference to supplies of laboratory glassware, and I think that it is very important that any anxiety on the part of the readers of THE SCHOOL WORLD should be immediately allayed. I therefore beg to place before you the following information:—

The British Laboratory Ware Association, which consists of about 75 per cent. of the apparatus supply firms in the United Kingdom, was formed a few days after the outbreak of the war, in order to co-operate in connection with the production in this country of laboratory glassware, porcelain, filter papers, etc., not hitherto produced in this country.

The association is not a ring or financial combine, but is merely arranged for the pooling of information, and for saving as much time, and preventing as far as possible duplication of correspondence with works, in the way of inquiries and information; the standardisation of sizes for moulds where works undertake to

make; and the elimination of difficulties which would occur if all the various firms were working independently.

So far, after months of correspondence, interviews, conferences, meetings, and considerable expense, the association has solved the problem in connection with glass ware, and in a few weeks' time the various firms constituting the association will be in a position to supply the most useful sizes of glass beakers and flasks in an English-made glass similar to Jena glass, which has been tested by well-known English men of science, and can be definitely and safely recommended.

The same holds good for porcelain evaporating basins, beakers, crucibles, and covers, etc., and also for an English-made filter paper equal to the German quality of Schleicher and Schüll No. 595; and further qualities of these filter papers will be forthcoming very shortly. Also, as time goes on, further items will be added to the list, as negotiations are brought to a successful issue.

You will therefore see that a great deal of important and valuable work has been done, and that the problem of glassware has been to a very great extent solved, so that an English-made glass equal to the well-known Jena glass will be on the market and can be supplied in a few weeks from the present time by the various firms constituting the British Laboratory Ware Association.

C. A. MERCER,

Chairman of the British Laboratory Ware Association, Ltd.

34 Camomile Street, London, E.C.

"Die Familie Buchholz," Julius Stinde.

MAY I direct attention to a point in the criticism of the book mentioned above, which appeared in THE SCHOOL WORLD for February?

An expression of a reviewer's opinion is always welcome and considered (with a view to publication in the next edition); on matters of fact, one verifies his statements before accepting them.

By ill-luck, some arrangements as to proof reading of the "Familie Buchholz" failed, hence mistakes passed that should have been detected, as, for example, "ein zusammenhangende," which is one of the three misprints your reviewer notices.

As regards the other two, may I say that Stinde wrote "aufgestellt" and "zum Weihnachten" just as they are printed? Surely he is not the only German author to use such forms?

G. H. CLARKE.

February 5, 1915.

I CONFESS it was inaccurate to call "aufgestellt" and "zum Weihnachten" misprints. Both are, however, unusual, and it would therefore have been better not to introduce them in the exercises, especially as there are no notes on these or any other peculiarities of usage in the text.

THE REVIEWER.

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SIXPENCE.

SCHOOL EXAMINATIONS.

I. EXTERNAL, WITH SPECIAL REFERENCE TO CIRCULAR 849.

By PROF. WALTER RIPPMAUN, M.A.

THE word "examination" has unpleasant associations for most of us. We remember how, as examinees, we were set papers a first glance at which made a cold shiver go down our back; perhaps, as teachers, we have prepared pupils conscientiously enough, but the test imposed has been designed to bring out what they did not know, rather than what they did; or, as examiners, we have laboured hard to produce a good paper, yet failed to escape adverse criticism. It is not denied that examinations may also leave pleasant memories: the examinee may have "floored" the paper, the teacher feels that the results do justice to his work, the examiner may look on a paper he has set with legitimate pride. But, on the whole, examinations are not popular; they are regarded in the light of a painful necessity.

Now we may profitably inquire to what extent they are necessary, and whether they need be painful; and for this purpose it is well to deal separately with the external and the internal examinations of schools.

In this article I propose to consider what purpose external examinations serve, and what form they should take; and I shall have occasion to deal with most of the suggestions contained in Circular 849 of the Board of Education. These have given rise to widespread discussion, which is not always of the most enlightened or enlightening character. One suspects that many who attack any move on the part of the Board as an outrage on the "freedom, variety and elasticity" of our schools are in fact chiefly concerned to prevent anything from ruffling the surface of their own particular backwater. The Board was bound to take steps in the matter of external examinations; and I am of

opinion that it has throughout acted in the way best calculated to obtain expert criticism and advice. That the adoption of its scheme will render the central authority still more powerful no one will deny; but, judging from its policy towards secondary schools during the last decade, we have reason to believe that it will use its powers wisely.

External examinations serve a double aim: they are a test, applied by unbiased and experienced examiners, of the efficiency of the school as shown by the performance of pupils who have been educated there for some years; they are also a test of the individual pupil, the passing of which may open to him various careers and, in certain cases, secure pecuniary help, without which he would have to be content with less ambitious prospects.

Now it has been suggested that an external examination, mainly written, is no adequate test of the efficiency of a school, as it affects only a small portion of the pupils and fails to give credit for all that by which education is greater than instruction. (Some even go so far as to say that an external examination tests the memory only; but anyone familiar with good modern examinations will reject this as an unwarranted statement.) It is added that inspection is amply sufficient for testing the efficiency of a school.

I believe that sympathetic inspection is of the greatest value; it undoubtedly can consider many aspects of efficiency that do not come within the purview of an external examination. But in the first place, inspection often loses in value because it comes at long intervals and the inspectors are not in touch with the school during these intervals; and there may be considerable changes in the inspecting staff, so that scarcely one inspector takes part in the second inspection of a school who also inspected it on the first occasion. In the second place, experience shows that the results of a written examination may serve to modify as

well as to corroborate the impressions obtained from an inspection; even the master, who can and should know the capacity of his class better than any inspector, is often surprised at the additional knowledge he obtains from a written test. This suggests the importance of a close connection between examination and inspection, to which further reference will be made below.

In estimating the efficiency of a school it is necessary to recognise a standard, that is (in the words of Circular 849) to know "what may be expected of pupils" of a given average age "of reasonable industry and ordinary intelligence in an efficient secondary school." The inspector has such a standard in mind when he gauges the work of a school; but a written examination is able to do so with much greater precision. This by no means necessitates the setting of identical papers to all the schools examined; uniformity of standard is not incompatible with considerable diversity of syllabuses and papers.

An external examination affords an incentive to work. This is true not only of examinations of senior and higher standard, but supplies the main justification for retaining the junior examination, always assuming that preparation for this does not in any way interfere with the syllabus and methods of teaching. Experience shows that the work in certain parts of a school has been greatly improved when the junior examination became a goal; and success in it has often so much encouraged a pupil and his parents that his school life has been extended with a view of his attempting a further examination.

In Circular 849 it is stated that the two examinations contemplated will be suitable for a fifth form and a sixth form respectively; and that all schools which claim to be recognised as efficient secondary schools should be able to present a whole form for the first examination. These statements are based on the view that the examinations are primarily a test of the efficiency of the school; hence we may profitably consider them here.

The Association of Headmistresses, in its thoughtful memorandum on Circular 849, says:—

The nomenclature and status of classes and forms differ very widely according to the conditions and circumstances of individual schools. The committee would much prefer, therefore, that all reference to "forms" be omitted in any regulations issued hereafter, as such reference may be misleading.

Reluctantly I feel bound to disagree with this comment. I see no gain in the present diversity of standard in what are called sixth forms. It matters very little what names are

given to the lower and middle forms; upper and lower, A, B, and C, α , β , and γ , shell, remove, and transitus, may be used freely. It is, however, very important that we should attach a standard meaning to "sixth form"; by tradition this is the highest, and the highest form of an efficient secondary school should contain pupils who are above the senior standard. If a school has, owing to special conditions and circumstances, no such pupils, then the fact should be made clear by the top form being called the fifth. This is the idea underlying the first statement of the Board of Education quoted above, and I am convinced that it is sound.

The Association of Headmistresses supports its objection to the second statement by the following comments:—

(a) The committee desires that no examination be made compulsory. It is fully sensible of the gain to education due to the substitution of inspection for examination as a test of general efficiency. [I should prefer to say: "The combination of examination and inspection."]

(b) It deprecates any assumption that the efficiency of a school should be judged by the power of presenting a *whole* form for such an examination. It is of opinion that local conditions and the economic circumstances of the pupils strongly affect the standard of work reached by the upper forms, and some schools, most thoroughly efficient, and filling a necessary place in the education of a district, may yet find it difficult to present a whole form even for the first examination. [It is in such schools that a junior examination is particularly valuable.]

(c) The classification of the older girls in a school should not depend only on their ability to pass examinations. There is in almost every school a certain number of girls of "reasonable industry and ordinary intelligence" whom it is useless to expect to reach the normal examination standard, but who are yet valuable members of the higher forms of the school.

The Board of Education will no doubt give full weight to these considerations; at the same time it must be pointed out that the Board defines a secondary school as "a school which provides a progressive course of general education for pupils of an age range at least as wide as from 12 to 17." It is therefore not unreasonable to expect that many in the top form should be able to reach the pass standard in the General Examination, which is intended for pupils of average ability of from 16 years to 16 years and 8 months. Inspection should amply suffice to determine whether in any particular school local conditions and the economic circumstances of the pupils explain inability to present a whole form; and there can be no doubt that the head of the school should be given full discretion to decide whether it is good for any particular pupil to

take the examination. It would be a grave mistake to introduce an indiscriminate system of "payment by results."

The external examination is also valuable for determining the relative capacity of individual pupils. This may be necessary for various purposes. The universities and professional bodies may require evidence as to the fitness of a candidate to pursue university or other professional studies with profit; and for this purpose an external examination is more convenient and, I believe, more satisfactory than, for instance, a testamur from the head of the candidate's school. University entrance scholarships are competed for by candidates from many schools, and some external test is therefore unavoidable. Leaving exhibitions from schools are often awarded as the result of external examinations; but here I think there should also be an oral test in all the subjects offered, which may well be conducted by an outside authority, and due weight should be given to the opinion of the head of the school as to the fitness of each candidate to profit by higher education.

If it be conceded that, for the reasons given above, external examinations cannot with advantage be eliminated from our schools, we may now consider what form they should take if they are to be helpful rather than harmful.

Everyone agrees that we have imposed too many external examinations on our schools; what may we regard as the minimum? Circular 849 says two, roughly of senior and of higher standard; I believe that, at any rate for some time to come, many schools will also derive much benefit from a well-conducted junior examination, that is, one that is not purely external, but is based on the syllabus of the school. (It is likely that in some subjects a large number of schools will be able to take identical papers; but whenever a school requires it, a special paper should be set, the examining body being responsible for uniformity of standard.)

In order to ensure that the university which examines may carry out its work satisfactorily, there should be intimate relations between it and the schools.

The Board of Education recognises no other examining bodies than those of the universities, and this has led some to object that "university dons are not fit persons to examine schools." It is not likely that this sweeping assertion will meet with general acceptance; but it contains a warning which it would be unwise to neglect. A university, in selecting examiners, will always be inclined to favour members of its own academic staff or men who have won academic distinction elsewhere, and

may be disposed to attach too little weight to other qualifications. A man of great academic distinction may make a wretchedly poor examiner of schools. This danger is decreased when there are two examiners in a subject and it is made a rule that one of these shall have had experience of teaching in a secondary school; but sometimes the school experience is not recent, and the ex-teacher is out of touch with modern developments; and sometimes the examiner, though still engaged in teaching, has "kinks" which detract from the value of his work.

All this points to the need of moderators, a permanent body of experts whose duty it is to maintain uniformity of standard, to ensure that the papers shall be in accordance with the syllabuses submitted, to prevent ambiguity of wording, etc.¹

This, however, is not enough if the relations between the university and the schools are to be really intimate, and if the examining body is to be more than a mere setter and marker of papers. As the Board of Education rightly says, examination and inspection must go hand in hand; and a university examining body should have its own inspectors (who may also be moderators) as advisers in all matters affecting the secondary schools that take its examinations, and possessing a special knowledge of those schools, based on inspections, advisory visits, reviews of the internal school examinations, etc. It follows that, as a rule, a university should examine the schools within what may be termed its sphere of influence.

It may be added that while it is convenient that "each examining body should receive as a matter of course the [Board of Education] inspection reports of the schools for which its examination has been approved," this is by no means adequate for ensuring a proper knowledge of the schools; inspection reports are often four or five years old and may thus present a very misleading picture of a school. It is obvious that the report of an inspection could not assist the examiners in estimating the capacity of individual candidates.

Let us now consider more closely the first or general examination of Circular 849. It is intended to test general education, and the hope is expressed that it may serve also to qualify for admission to the universities and the professions; it is proposed that "the conditions for attaining a simple pass shall be somewhat easier than those required of candidates in order that the certificate shall be accepted for the purpose of matriculation."

¹ Circular 849 (§ 2) suggests a method of co-ordinating the standards adopted by various examining bodies which ten years' experience of moderating leads me to regard as not practicable.

"The subjects for examination will be treated as falling into three main groups: (i) English subjects, (ii) languages, (iii) science and mathematics; and the candidate will be expected to show a reasonable amount of attainment in each of these groups, and will be judged by this test rather than by his power to pass in a prescribed number of specified subjects."

The requirement of proficiency in groups rather than in single subjects is an innovation, and it will be interesting to see the schemes produced by the various examining bodies. Group (i) will include English language and literature, modern history, perhaps geography (though this might also be included in group (iii)), possibly logic, economics, and economic history. To satisfy the examiners a candidate would probably be required to pass in English and at least one other subject; whether English would mean an essay, *précis*, etc., and a few questions on English literature (based on a syllabus submitted by the school), or whether English literature would be treated as a separate subject is a question to be decided. In group (ii) would appear the foreign languages and perhaps ancient history; here a pass in one language would satisfy the Board of Education, as it is laid down in its memorandum on the curricula of secondary schools that a pupil need not take more than one foreign language. In group (iii) arithmetic would be compulsory, and the candidate would also have to satisfy the examiners in elementary mathematics (geometry and algebra) or in a recognised science subject.

It would then be possible to pass, for instance, in English language and (or?) literature, history or geography, French, arithmetic, and elementary mathematics; and if this is regarded as insufficient, it might be laid down that a candidate must offer at least one more subject drawn from any of the three groups. For matriculation purposes it may be desirable to require arithmetic, elementary mathematics, and at least one other subject from group (iii).

According to Circular 849, the examination is to be "conducted on the principle of easy papers and a high standard of marking," which has been explained to mean a high minimum pass mark; and it is suggested that a "mark of credit will be assigned to those candidates who, in any specific subject or subjects, attain a standard which would be appreciably higher than that required for a simple pass." It seems desirable also to recognise (though there is no reference to this in Circular 849) work of special excellence. Anything less than 40 per cent. for a pass in a

group² could scarcely be described as a "high standard of marking," but this is more than is at present required in most examinations of senior grade, and it will necessitate easier papers, as the circular implies. For "credit" we can scarcely expect a higher minimum than 50 per cent., which is usually considered a "second class" mark; and for "distinction" or "honours" 66 to 70 per cent. would seem appropriate. To have these various minima will materially increase the number of "border-line" cases, which always require special attention, and will thus add to the work of the examiners; but the "credit" mark may after all prove unnecessary, as is suggested below.

The candidates are required to pass in three main groups, but a fourth is recognised, which includes music, drawing, manual work, and housecraft. The Association of Headmistresses favours the addition of physical exercises, and suggests that this group should be on a level with the others, and that candidates should be expected to pass in group (i) and in any two of groups (ii), (iii), and (iv). It is very doubtful whether the Board of Education would be well advised to adopt this suggestion. I believe, however, that domestic science might well appear as a subject in group (iii).

It is much to be desired that the universities and professions will see their way to utilise the proposed general examination, and that they will accept the principle of "passing in groups." The higher standard which they may rightly demand could be secured by a higher average mark in each group, excellence in one subject being allowed to make up for relative (not absolute) weakness in another; possibly also by requiring more subjects to be taken. If this suggestion is adopted there is no need for a "credit" mark in individual subjects, which would simplify matters considerably. It is conceivable that some professions might require a high mark in a particular subject or subjects.

The second or special examination is not dealt with very fully in Circular 849, but the memorandum on the curricula of secondary schools shows what is intended.³ No effort must be spared to encourage and develop the teaching of pupils who shall have passed the general examination, and every inducement must be offered to them to take the two years' course suggested by the Board. I should be inclined also to provide one year's courses in commercial or secretarial subjects and in

² With perhaps 30 per cent. as the lowest mark in any single subject; but no subject should appear on the certificate in which less than 40 per cent. has been obtained.

³ It is surprising that this memorandum, while dealing (in § 51) with specialisation in two modern foreign languages, does not consider the possibility of specialising in English and one foreign language.

housecraft for those who have passed the general examination, and to arrange for a suitable examination and certificate for these pupils.

Whether the special examination is attractive will depend in large measure on the universities. A candidate who passes the general examination at 16, or even less, with "credit" will be qualified for admission to the university; but no such candidate should be registered as an undergraduate until he is seventeen; and even then he should not have the same privileges as one who has stayed on at school and passed the special examination. The university course must on no account be reduced to fewer than three years; but those who have passed the special examination might well be excused the intermediate examination (see the report of the Royal Commission on University Education in London, p. 206). On the other hand, those who have matriculated by means of the general examination only would be expected to take an intermediate examination at the end of their first year; and it may be suggested that it would even be well to extend their university course to four years, at least if they desire to take a degree in Honours.

The only other matter raised in the circular which I have space to mention is the co-operation of teachers. Under this head we find the suggestion that heads should be required to submit "an estimate of the relative merits of the candidates in each of the subjects offered by them for the examination." The estimate is to be "taken into account by the examining body in doubtful cases for the purpose of the award of certificates." The Association of Headmistresses suggests that this should be "allowed," not "required." I have no idea how it would work in practice; but I should prefer a synthetic statement of the capacity of each candidate, drawn up by the form master or form mistress in consultation with the other teachers of the candidate, and countersigned by the head; it would be something like a carefully considered report on the last year's work of each candidate, and might include an expression of opinion as to excellence in any particular subject and the attainment of a satisfactory standard in general education. This would be of real value to the examining body.

I am aware that I have said little about the co-ordinating authority, and nothing about certificates and finance; but this article is already longer than I had intended; and I therefore conclude with the confident hope that much good will result from Circular 849.

DESCRIPTIVE GEOGRAPHY OF THE WAR AREA.

By J. HAMILTON BIRRELL, M.A., F.R.S.G.S.

THE annexation by Austria-Hungary of Bosnia and Herzegovina in 1908 foreshadowed a larger policy which should secure her undoubted supremacy in the Balkan Peninsula. She turned her eyes on Salonika, as did Germany on Constantinople, to both of which the approach lies by the Morava tributary of the Danube, through Serbia. Hence Austria's partial envelopment of that small country as evidenced in a study of the boundary between them, the Austro-German economic supremacy in Serbia (those countries are credited with two-thirds of Serbia's trade), and Austria's fear that the existence of a strong Slavonic Power would excite her discontented Slavs, all pointed to an attempt to smother Serbia. Austria's refusal of an Adriatic outlet for Serbia, culminating in the creation of Albania, also foreshadowed this.

But it was not to the interest of Russia to allow either Austria or Germany to control Balkan policy. As champion of the Slavs and head of the Greek Church, as well as because of her persistent claim to the natural outlet to the Mediterranean, she threw her weight on Serbia's side, and is demonstrating to the world that she is awakening to her vast potentialities. Germany desired to cripple her before her full development should be reached. The ultimate defeat of Russia by Germany is a chimera.

The purchase by Germany of Turkey's assistance was not carried through because of the strength of that moribund country in military resources. This Power, at one time formidable and triumphant, has sunk, through misgovernment and corruption, involving an insecurity that ruins political, social, and economic life. From controlling the Balkan Peninsula, Turkey-in-Europe, by the successive rebellion and defection of liberty-loving subject-States, with their natural jealousies and political desires for consolidation, has become disintegrated and reduced to a small area, consisting of the immediate hinterland of Constantinople, with a population only a little greater than that of the city itself.

Germany's purpose was much more diabolical than the mere attempt to buy an ally. Her aim was the declaration, by the supreme head of a large part of the Mohammedan Church, of a Holy War of the Mohammedans over the earth. The underlying idea was to involve India (Mohammedan population 21 per cent. of whole), Egypt (92 per cent.), and other areas in the British Empire in an internal struggle which would have taxed our powers

and weakened our resources. That such a plan miscarried, especially in our great Indian Empire, is due in part to an appreciation of the non-necessity on any religious grounds for a Holy War, and in part to the justness and fairness of our rule in our great Eastern dependency.

The disappearance of Turkey-in-Europe, should it occur, may involve the break-up of the Turkish Empire in Asia, where the Arabs and Armenians may seek independence, and Mesopotamia be protected by some European Power. Germany's projects in the Ottoman Empire were foreshadowed in the concessions she obtained in Mesopotamia, while France, which is Turkey's greatest creditor, and Britain, which has also advanced loans in exchange for concessions, to the almost bankrupt Government at Constantinople, must have a large share in the determination of any policy that may be necessary at that city. But, above all, the claims of Russia, Turkey's great antagonist, cannot be disputed, and "the weaker Turkey becomes, the greater is the share which Russia will have in the ultimate solution."

Thus the Eastern theatre of war gives the teacher of geography a first-rate opportunity for lessons on areas that generally receive scant attention. Lake-riddled East Prussia; the plain and plateau of economically rich Poland; the industrial area of Silesia; the agricultural and pastoral Galicia, with its oil-wells and salt-mines; forested Bukovina; the passes and railways of the Carpathians, Hungary, Serbia, and the loose Turkish Empire in Asia offer fertile fields of study in ethnological, political, economic, and physical geography.

Ethnologically, the Eastern war-area is a great jig-saw puzzle, quite beyond the powers of school-children. Their understanding is limited in most cases to one race for each country. To help them to realise the heterogeneous aggregation of peoples in the Dual Monarchy all that is necessary is to point out that the unassimilated medley of races is made up by people crossing the boundary. Thus in Austria-Hungary we have Austrians, Hungarians, and Poles to begin with; among these, especially near their own boundaries, are Montenegrins, Serbs, Rumanians, Russians, Germans, and Italians; while the ubiquitous Jew and Gipsy require no special introduction. From such an explanation it is easy to understand Serbia's claim to Bosnia and Herzegovina, Rumania's to Bukovina and Transylvania, Italy's to the Adige valley and the area round Trieste. The visualisation of the races may be best realised through pictures where dress and occupation are depicted.

Politically this Eastern theatre may be

studied as the "ramshackle empire," with its joint constitution; the discontented Poles seeking for the resurrection of their old kingdom; the Russian peasants awakening to day-dreams of democracy; Serbia's visions of a Greater Serbia; Turkey's nightmare; and so forth. Conditions of town and country life before the war should be touched on.

From the economic point of view we should study the conditions of production and manufacture in the separate areas—Russia's grain crops yielding surplus wheat for us and for Germany, her development of industries in Poland especially, the importance of Lodz; Rumania's wheat and maize for our markets and her petroleum in relation to Germany's shortage; Hungarian flour and horses in similar connections; and the many other instances that will occur to the teacher.

Physical geography will be based on the orographical map. Such points as the outlying position of East Prussia, Poland, Galicia, and Bukovina will arrest attention; their physical connection with (*e.g.*, East Prussia), or separation from (*e.g.*, Galicia), the ruling country will be noted. The climatic conditions obtaining in the Eastern theatre, severe though they be, appear to have had less influence on the war than was anticipated. There is, of course, deep snow on the Carpathians as well as on the highlands of Transcaucasia, but the Vistula is not yet frozen over, nor has ice incapacitated the Russian Baltic fleet. How this climatic factor has influenced the combatants we shall not learn in detail until after the war, though we have distinct evidence in the frost-bitten feet in the trenches on the western frontier. The few newspaper accounts of the soldiers' sheep-skins, etc., show merely the adaptation to war-conditions of what has been proved indispensable in the same regions in times of peace.

Germany's claim to "a place in the sun" is the key to the western theatre. Her colonies were the reply to her economic progress, with its demand for raw materials, her emigration statistics showing a permanent drain of strength, and her dream of marine omnipotence. She founded her African Empire in 1884, following a maximum emigration of a quarter of a million in 1882. Since then the number of people who leave her shores has steadily decreased, and now the annual figure is less than one-tenth of that of 1882; economic progress has absorbed the remainder. Her people do not make good colonists, for "they cannot assimilate conquered races; but they can very readily be assimilated to the races of these foreign countries in which they settle." The Prussian treatment that has alienated the peoples of the ravished areas of Poland,

Schleswig-Holstein, and Alsace-Lorraine has sadly reduced the Hereros in her South-West Africa. Germany's possessions are ruled by the hob-nailed boot. To secure more colonies she must take them from other empires, for the areas most suitable for her inhabitants are already in the hands of other Powers. From France nominally, but from our land in reality, a victorious Germany would snatch the colonies she covets, and by her colonial government add still another to her political crimes.

By taking the geographically easiest route for the invasion of France, Germany showed her intention of absorbing the Low Countries and thus securing the ports that are her natural outlets, for nearly half of her trade passes through Dutch and Belgian ports. Holland was spared, for she could offer no strong defence against German occupation if that country proved victorious, and would prove useful if complications arose. Thus the States that were constituted for her defence against France became the pathway of German advance on that country. Buffer States have a precarious existence when treaty-guarantees are broken: of this Belgium is witness.

Our participation on behalf of an outraged nation gave the war another aspect, for our naval supremacy left the Austro-German Allies shut in on all sides. For them the question of supply became important, and is becoming more and more insistent. At this point the value of neutral countries becomes apparent; they are potential, if not active, sources of supply, and if a political outline map of Europe be coloured to show the belligerent and neutral countries in separate tints, the difficulty to the central Powers of obtaining supplies is evident, while the openness to the world's markets of the peripheral Allies with naval supremacy is obvious.

The only waters on which the central Powers can move with any freedom at all are the twice-removed Baltic and Black Seas, which can communicate with the open ocean only through the North and Mediterranean Seas respectively. The latter in turn are ruled by the allied fleets, which also control the oceans. In addition to constant supplies, this control implies the presence of colonial troops in the theatre of war, since the defence of the British and French Empires is secured in the North and Mediterranean Seas. The enemy fleets, unlike their armies, cannot combine for joint action.

As in the eastern theatre, the geography of the western area involves mainly allied territory, for Germany, owing to the political importance of both her own frontiers, and her initial military advantage, has kept her terri-

tory almost inviolatè. In the west the teacher of geography is able to devote attention to mangled Belgium, while in France he must concentrate on the very valuable area lying in the triangle Dunkirk-Paris-Belfort. Here are the industrial north-east round the western extension of the Belgian coal-fields, the famed vineyards of Champagne, the great iron-fields of Meurthe-et-Moselle, and the water-power cotton factories of the Vosges slopes. Just as French industrial life is very badly hit by the enemy's occupation, any allied invasion of Germany or Austria-Hungary will materially cripple the enemy. The invasion of Hungary or of East Prussia strikes a blow at food-supplies; Silesia is one of the three very great manufacturing areas (Saxony and Westphalia being the other two); Alsace-Lorraine is the monument of the successful war of 1870, and a French invasion would be a welcome incitement to revolt there. A German retreat from Belgium would be to yield all that she has to show after six months of war.

Thus we are naturally led to the economic considerations to which the war has given rise. The geography teacher may best serve his ends by an examination of Anglo-German trade in relation to the whole trade of the United Kingdom and of Germany. Food-stuffs, raw materials for clothing and shelter as well as for warfare, raise many interesting problems. As all commerce is world-wide in its ramifications, the economic questions involve the study of neutral trade and contraband of war, as well as of sea-borne goods, whether contraband or not, in relation to sea-power. In this connection, moreover, our colonial markets raise several problems that may affect our home policy to an acute degree. Germany depends very largely for her raw cotton on Egypt and India, and for her wool on Australia; the stoppage of such trade would be a heavy loss to these parts. The percentage of loss of our manufactured exports to Germany is a much smaller matter.

Much more interest is taken by children in the geographical study of the great German Empire itself. Her agriculture in relation to food supply, her industries in relation to war supplies of all kinds—clothing, equipment, guns, and ammunition, and her government in relation to the everyday life of her people will be keenly followed and enjoyed. Internal communications in relation to transport of troops, war material, medical equipment, and food supply make another most interesting subject for inquiry, having a very close connection with the conduct of the campaign on both frontiers.

In our land we have plenty of evidence that we are at war. We see various warlike pre-

parations at geographically defensive points; but the real appreciation of a state of war results from the withdrawal of labour from most industries and pursuits, with a consequent rise of prices all round. In many centres we see an intense industrial life, for military requirements must be satisfied.

Finally, for the real limit here, as in school, is space, *i.e.*, time, we begin to realise, though only vaguely, even yet, our dependence on foreign countries. I need not labour the question of foodstuffs, and will merely mention our 80 per cent. dependence on the U.S.A. for cotton and the relation of this to its non-inclusion as contraband of war; our almost criminal lack of attention to afforestation with the consequent shortage, due to the German veto, of Swedish pit-props for our coal-mines, and our suicidal neglect of sugar-beet cultivation, the results of which need no elaboration.

DECIMALS AND THE DECIMAL SYSTEM IN ENGLISH SCHOOLS.

By S. LISTER, B.Sc.
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I.

THE necessity for teaching the decimal system of weights and measures rationally and thoroughly becomes more and more obvious every day. In our war against German trade, for instance, "unless our traders adopt the metric system for all transactions with countries using it, capture of German markets will be temporary only."¹ We have been told again and again by British manufacturers dealing with foreign countries and the Colonies that the maintenance of two distinct standards causes distinct loss and great inconvenience, thus making it difficult for them to compete with their foreign rivals, who have to maintain only one standard. Also, as the English system could never be used as an international system, it must ultimately be superseded by the decimal system. Our Colonies are only waiting for the lead of the Mother Country. In 1902, at the conference of the Prime Ministers of the self-governing Colonies, the following resolution brought forward by the Canadian Government was passed:—

"That it is advisable to adopt the metric system of weights and measures for use within the Empire, and the Prime Ministers urge the Governments represented at this conference to give consideration to the question of its early adoption."²

English weights and measures are not understood by foreign buyers, and they natur-

ally prefer to deal with manufacturers who use their own weights and measures, and in this way British and colonial manufacturers are placed at a disadvantage. Year after year our consuls in foreign ports report that the retention of our insular system of weights and measures does distinct injury to our foreign trade.³

If pupils are acquainted with these and similar facts, they are keener to obtain an intelligent grasp of the metric system. Moreover, the anomalies and absurdities of the English system should be pointed out, and the simplicity and general superiority of the decimal system thrown into bold relief. In this way much can be done in preparation for the introduction of the decimal system and in the education of the public opinion of the next generation. It is only by getting children to realise the immense advantages of the metric system and the general improvement which that system would bring both in methods of calculation and in our foreign trade, that its adoption will be brought within the realm of practical politics. It is really astonishing that a system of weights and measures, which is so inconsistent with the decimal system of numeration, has been tolerated so long.

It is chiefly due to the fact that decimals and the decimal system are taught from a purely academic point of view that the superiority of the decimal system and the inconsistencies of the English system are not realised. Pupils get the impression that the English system is something that is to be used in everyday life, but that the decimal system is just another thing to be learned and not used. The effect of the English system on the mind of the foreigner is bewildering in the extreme. A teacher of foreign languages, who spoke English perfectly and had resided in England for many years, declared that he would never be able to learn the English tables because they were "so muddled." The heterogeneous mass of numbers, 2, 3, 4, 8, 14, 16, 20, 22, 28, 112, 1760, 2240, 4840, etc., to say nothing of $5\frac{1}{2}$ and $30\frac{1}{4}$, are in themselves sufficient to discourage a foreigner; but when he learns that a stone is sometimes 14 pounds and sometimes 8 pounds, a grocer's ounce is different from a chemist's ounce, a ton in cargo measurement is 40 c.ft. and not necessarily 2240 lb., a pint is subdivided into 4 gills in the South of England and 2 gills in the North, the acre has no corresponding unit of length and for practical purposes varies from place to place, a quarter in one table differs entirely from a quarter in another (*e.g.*, a quarter of wheat weighs about 500 lb.), we can better imagine his feelings than describe them.

¹ *Ibid* the Engineer. ² *Ibid* Pamphlet issued by Decimal Association.

³ *Ibid*.

The need for the adoption of the decimal system is being keenly felt. The British Pharmacopœia now contains formulæ in metric units only, jewellers have fixed the carat at 200 mgm., H.M. Customs give weights and capacities in pounds and gallons and decimals of these units, cotton merchants quote prices in pence and hundredths of a penny, and weights in 100 lb. and 1,000 lb. instead of tons, cwt., etc., and many engineering firms have already adopted the metric system.

From the point of view of educational economy every teacher of mathematics would welcome the introduction of the decimal system. What a tremendous saving of time and energy there would be if compound rules need not be taught! There is no doubt that our English system does help in the teaching of vulgar fractions, but these would take a much less important place in the arithmetic course if the decimal system were adopted. It has been urged that the mental training involved in learning the English tables and the consequent compound rules is good for the pupil, but surely the time saved (and it would be considerable) could be spent in teaching things that would certainly have an equal or greater educational value. "The drudgery involved in this futile description of mental gymnastics is more akin to the treadmill than the cricket field, and inspires a child with a distaste for anything in the shape of figures which often persists through life. He generally does not even remember in after life the heterogeneous mass of units he has had to juggle with."

Again, it cannot be seriously urged that continental children are less mentally alert than our own, due to the simpler and more convenient system of weights and measures which they learn. It is not generally realised that the adoption of a decimal system of money and weights and measures would mean that compound addition, subtraction, multiplication and division, fractions of concrete quantities, decimalisation of money and weights and measures, all the awkward forms of reduction and practice would become unnecessary; and, when one examines the contents of the elementary text-books of arithmetic it is astonishing what a large proportion of the matter is devoted to them. The greatest difficulty is experienced in getting pupils to work in decimals English money questions involving division; they almost invariably multiply by 20, 12, 4, rather than continue the work in decimals, get the result correct to three places, and read off the answer. In the examinations of one large English railway company, prospective junior clerks are still expected to state results absolutely correctly,

even if they involve ridiculous fractions of a penny; and results obtained by approximate methods correct to the nearest penny are looked upon with disfavour, and are even rejected as being incorrect.

Examiners' reports frequently state that decimals and the decimal system are not really understood, that weights are given in litres and the like. Few pupils, who have not used decimal units, can tell whether 0·086 is greater or less than 0·1; and it is quite common to find questions on the decimal system worked upon similar lines to corresponding questions in the English system, *e.g.*,

$$\begin{array}{r} 4 \text{ m. } 3 \text{ dm. } 4 \text{ cm.} \\ 3 \text{ dm. } 3 \text{ cm. } 5 \text{ mm.} \end{array}$$

showing that the decimal nature of the metric system has not been realised. Again, it is seldom that pupils can give the exact remainder in a long division sum in decimals.

The examples quoted above all go to show that the teaching of decimals and the decimal system is lacking in reality. Vulgar fractions are used rather than decimals wherever possible, and the teaching of decimals and the decimal system is much too abstract and not sufficiently illustrated and explained with reference to concrete examples. As an aid to teaching decimals, the metre and gram and their subdivisions are invaluable. Some of the purely abstract exercises are valuable in producing accuracy and precision, but certainly most of the exercises should be based upon practical and concrete examples. Actual practical work is essential, but it should be limited and always have a definite end in view; it must never develop into mere playing with scales and objects.

It is generally necessary to start the secondary-school course in arithmetic by a rapid revision of the simpler rules, special stress being laid on fundamental principles. Decimals have generally to be thoroughly taught in the lowest forms. The best plan seems to be to arrange a concentric course, first revising the four rules for integers, money, and simpler weights and measures, introducing simple areas and volumes and the method of unity. The questions set should be of a concrete and practical nature, as nothing deadens interest more than exercise after exercise of purely abstract examples. The interest of the pupil is aroused by giving the examples a practical form, and he feels that it is something more than manipulation with figures. There is no special difficulty in applying the method of unity to simple problems, and it should be introduced as early as possible.

It is in this introductory revision course that the decimal systems of length and weight are

most suitably introduced, and as they are used in the elementary physics or practical measurements class, they are less likely to be forgotten. To fix the meanings of Kilo, Hecto, Deca, deci, centi, milli, it is convenient to use them from the beginning when considering the graphical abacus and place value. Thus K, H, D, U, d, c, m, should be placed at the heads of the columns in the graphical abacus, and a number read in units, hundredths, thousandths, etc., and decimals of these units. Thus,

K H D U d c m
3 0 4 2 0 5 6

may read as 3042'056 units, 3'042056 thousands, 3042056 thousandths, etc. Incidentally, the pupil learns to multiply and divide by powers of 10, and to reduce metric units. When asked to read 3 Km. 2 m. 4 dm. in metres, it is noticed that the H and D columns are missing, and the result is read at once at 3002'4 metres. It is wise to insist on Kilo, Hecto, Deca being written with capital letters, deci, centi, milli with small letters, the large letters denoting something larger than the unit and the small letters something smaller than the unit, and then there is no difficulty with the contracted forms and no confusion between Deca and deci.

Practical use of the units is essential, and the relations between the metric and English units form the most convenient practical examples with which to commence. A beginning may be made by estimating tenths of large units on the blackboard; then lines such as those given in preliminary geometry textbooks should be measured in inches correct to the nearest hundredth and in centimetres to the nearest tenth of a millimetre. This being done, the number of inches in 1 centimetre should be obtained by measuring in inches a line 10 cm. long. A discussion as to the error in the result is useful at this stage, and the importance of measuring a line as long as possible emphasised. A line 1 cm. long might be measured and the results compared. Now obtain from the above result the number of inches in a metre, again discussing the error. The result may be checked by taking a line on the blackboard a metre long and measuring it in inches. The discussion as to the error in the result is very important from the point of view of the subsequent work in approximations, and tends at the outset to eliminate ridiculous answers. A pupil who has realised this will not give the height of the school weather-vane as 53'416 feet, when he obtains it by rough measurement of angles of elevation and drawing to scale later in the mathematics course. Similarly, the number of centimetres in an inch is obtained by measuring a line the length of which is 10 in.

Finally, to emphasise the method of eliminating error, the thickness of a page of a book should be obtained by measuring the thickness of 100 pages and taking the average of a number of readings.

The metric scale should also be used in the manual and cardboard work. Open decimetre and 6-in. cubes are extremely useful models for the arithmetical work. As an exercise in reduction, pupils might be asked how they would determine roughly the number of Kilometres in a mile without leaving the classroom. The degree of accuracy of the result should be again roughly determined. Some exercises showing the relative sizes of decimal fractions should be undertaken by considering decimals of a metre, *e.g.*,

Arrange in descending order of magnitude 0'1, 0'086, 0'009.

Again, simple fractions of a metre may be expressed in centimetres and millimetres and then in decimals. If outdoor measurements are undertaken in the elementary geometry or geography course, the half-chain and Decametre should be compared. The step from chains to miles in the English system is a simple one, and the error in taking a half-chain for a Decametre is roughly 2'3 inches, the half-chain being the larger of the two.

Tables like the following might then be completed:—

Metric units	English units	Approximate error	
1 Km.	... fur.		
1 Hm.	... ch.		
1 Dm.	... 11 yards	...	- 2'3 in.
1 m.	... 39'37 in.	...	- 0'001 in.
1 dm.	... in.		
1 cm.	... in.		
1 mm.	... in.		
English units	Metric units	Approximate error	
1 mile	... Km.		
1 fur.	... Hm.		
1 ch.	... Dm.		
1 yd.	... m.		
1 ft.	... dm.		
1 in.	... 2'54 cm.	...	- 0'00005 cm.

These tables provide useful and simple examples in reduction, and, moreover, these examples have a definite object in view. The tables are also useful for reference.

(To be continued.)

Cambridge County Geographies. Flintshire. By J. M. Edwards. 172 pp. *Peebles and Selkirk.* By G. C. Pringle 149 pp. (Cambridge University Press.) 1s. 6d. each.—These additions to this notable series maintain its traditions. In Flintshire the coastal gains and losses and their results to the people of the county, the presence of the Carboniferous rocks and the consequent minerals, *e.g.*, coal and lead, form important items of special interest. In the Scottish counties the various aspects of the woollen industry, and the historical reminders of the situation of the area near the border, are matters of striking importance.

THE AGE OF TRANSFER FROM THE ELEMENTARY TO THE SECONDARY SCHOOL.

By A HEADMASTER.

ON the whole the curriculum of the better class of preparatory school is adapted to the requirements of the public school. This is natural and rational. On the contrary, the public elementary school is, and should be, a thing in itself, with final aims distinct from those of the secondary school; the one does not necessarily provide an education preparatory for admission to the other. It would be wrong for it to attempt to do so.

This fact, when accompanied by the great increase in the number of secondary schools, which derive a large proportion of their pupils from elementary schools, renders the age of transfer a matter of great importance. Many schools receive 75 per cent. or even more of their pupils after a preliminary education, which has given no specific consideration to the curriculum of secondary education. The entry of such boys into their new sphere of work must not be delayed beyond the time when the more restricted work of elementary education can fruitfully expand into the wider range of subjects appropriate to a more advanced kind of instruction. The change must take place before the divergent objects of the two types of schools have produced differences in results which cannot be ignored or reconciled.

What, then, is the correct stage for commencing this new plan of education? The official ruling on the point will be found stated by the Board of Education in the second paragraph of the Prefatory Memorandum to the Regulations for Secondary Schools. Here it is said that "the education to be provided by a secondary school, *beginning at an age not exceeding twelve*, must be carried on through a progressive general course of instruction, up to and beyond the age of sixteen." The sound reasons for fixing an age "not exceeding twelve" are seen, when we are informed in the third paragraph of the same Memorandum that "the curriculum must in all cases make adequate provision for instruction in . . . mathematics . . . physical science, including practical work for the pupils, and, except in the special case provided for by Article 10, in at least one language other than English." These are not subjects, which are normally included in the elementary school curriculum, though in certain cases some one of them, or some selection from them, may be taught.

There will not at the same time be much

difference of opinion with regard to the assertion that twelve is the outside age for the commencement of a course involving the beginnings of instruction in mathematics, science, and a foreign language. It follows that this age alone can be satisfactory for the entry of ex-public elementary school pupils into the secondary school. Most educationists agree that adequate results cannot otherwise be obtained, and that the congestion of new work is quite serious enough even at that maximum starting-point.

This reasonable idea is, however, promptly abandoned even in directions in which it might be most naturally and effectively enforced. The "Rules with Regard to Free Places" in the appendix to the Secondary School Regulations, although they state that "candidates should as a rule be under twelve," permit those of thirteen years or more. One great local education authority, although its junior scholarships are mainly awarded to children between eleven and twelve, arranges for a great many others for candidates between thirteen and fourteen years of age. Another important authority awards all its free places to candidates under thirteen years of age on August 1st in the year of the award, and, moreover, gives secondary school scholarships for intending teachers to boys and girls from elementary schools, who are between fourteen and fifteen years of age. Thus, a most salutary command is in practice mutilated into a most unprofitable confusion.

It is extremely difficult to generalise with regard to impropriety of practice in respect to ordinary admissions. But the writer has certainly had occasion to notice that ex-elementary pupils above the age of fourteen years, who have been refused admittance to his own school for reasons of age and incomplete attainment, have found places elsewhere.

Two important consequences should be noted from the existence of a second class of scholarships, between the ages of thirteen and fifteen years. The prospect of these prizes and successes must inevitably cultivate a tendency towards the retention in the elementary school of pupils whose parents might otherwise make an effort to place them in secondary schools at an earlier age. The candidates for the second set of scholarships would naturally be those who approached nearest to success in the competitions for the first kind. Although one may agree with the wisdom of schemes for meeting exceptional cases, the theory of "late development" is not convincing. It is, at least, common for parents to state that they have only kept their children at the elementary school, because the hope of

a scholarship success was held out to them. They express great concern, when they find that this delay has entirely excluded all chance of admission.

Parents are thus encouraged in the prevalent misconception that the secondary school is simply a prolongation of the elementary school. They clearly think that a pupil, who has finished an elementary school course, can and should naturally pass thence into a secondary school. They frequently express the desire to give their children a year or two at such a school "to finish off," after the close of the preceding elementary school training.

The inconsistency in system and regulation together with the pressure of general circumstances, which is in these ways accentuated, is calculated in the end to lead to the introduction of many pupils between thirteen and fifteen years of age, who know little or nothing of the distinctive secondary school subjects. They may either be put with boys between twelve and thirteen, who are commencing this new work, or placed in a form appropriate to their age and left to find their level, or allowed to omit a certain subject or subjects. All of these various arrangements are unsatisfactory in one way or another, either for the pupils themselves, or for their companions, or for the school. Staff allowances are seldom calculated on a basis which permits the only satisfactory course, that is, for such cases to be grouped with a view to their distinctive deficiencies. Even if this were possible, it is doubtful whether such abnormal attention to their needs would be justified.

In every way the entry of pupils beyond the regulation age should be condemned. It is bad for the tone of the school to have in it boys whose knowledge has no proper relationship to their age, who for this reason must often be put with children much younger than themselves. It is an unsound policy to encourage the view that the general principles of admission and transfer may be broken with impunity, or to create uncertainty by establishing various bases for entry. Organisation and teaching will suffer from the presence in lower forms of pupils who ought to be more widely distributed in the school. Finance will be affected, since those who come late are not likely to remain beyond the usual leaving age, and they will therefore reduce the average length of the school life.

What, then, are the remedies which might prevent these possibilities? The sentence in paragraph 2 of the Prefatory Memorandum to the Secondary School Regulations is worded somewhat carelessly. Presumably it

means that "the education to be provided by a secondary school" must begin with pupils "at an age not exceeding twelve." This would unfortunately be satisfied, however small the number of pupils beginning at that age. Article 1 of the Regulations only requires that a secondary school must "offer" a course suitable for pupils from twelve to seventeen years, and Article 2 with its stipulation that "an adequate proportion of the pupils must remain for at least four years and up to and beyond the age of sixteen" does not meet the difficulty. The whole tendency of the regulations is to make it quite certain that education of a particular type and range must be available, but to leave it very vague how far advantage must be taken of these opportunities.

The Board should indicate clearly that the general age for commencement must not exceed twelve years in the case of transfers from elementary schools, and should criticise later admissions. It would be well if some policy, analogous to that by which transfers between the ages of ten and twelve are encouraged, could be adopted in order to discourage transfers beyond that age. The additional grant of £1 on pupils between fifteen and eighteen years of age, which was initiated for the year beginning with August 1st, 1913, was a most advantageous concession. At the same time it was unfortunate that the principle included in Article 38 in its previous form ("the additional grant may be withheld from a school, to which an undue proportion of pupils are admitted at an age too late to enable them to derive full benefit from the school course") was given up. In fact, it would have been well if that condition had been retained with the omission of the words "an undue proportion of."

On the other hand it ought, so far as can be contrived, to be rendered impossible for parents to say with truth that they did not know the correct age and time for transfer. At present the regulations of the Board prescribe that notice of the offer of free places should be made known in elementary schools. This policy should be extended and provision should be made in order to ensure the effective conveyance to parents of the information, which seems often to be so entirely lacking amongst those who send their children to elementary schools. For this result the want of coherence in our educational system is more to blame than the absence of logic amongst parents. Their action is generally reasonably inferred from what they know of the elementary school system.

Every pupil in a publicly provided second-

ary school is substantially endowed by the State and the locality. Fees provide only a small proportion of the cost of the education. There should, therefore, be no admittance to such schools unless there is some probability that the pupil will justify this public expenditure, by remaining a reasonable time and by profiting from the educational advantages offered. A keen competition for places is the best means to this end. To induce that competition at the right time and under the right conditions, there should be a better and more direct official distribution of information to the parents of all possible secondary school pupils in elementary schools.

The action of local authorities is unfortunately largely occasioned by the need for elementary school teachers. On page 7 of its *Scholarship Handbook* for the year 1909-1910, when discontinuing its system of probationer scholarships, the London Education Authority was able to say that "the supply of teachers seems now to be sufficient to make it unnecessary for it to be increased by scholarships, specially allocated to intending teachers." Some such conclusion can alone be regarded as satisfactory. The still persisting policy of doles and kidnapping is a periodic failure in itself and a drag on education generally. Another sentence in the same handbook may well be recalled, as of wider application, *i.e.*, "it appears, moreover, that the value of the probationer scholarships have attracted certain candidates to take up a calling for which they have not been fitted." It seems essential for education authorities to get quite away from the traditional methods of finding recruits for training, and to think out their problem afresh. The transference of the so-called preliminary training of elementary-school teachers to the secondary schools has demonstrated the essentially artificial nature of the earlier supply. Now that poor boys of good intelligence can obtain an education without pledges, they will rarely agree to be teachers. It is ludicrous to notice how, in certain cases, this illuminating lesson is described as a failure of the secondary schools to do their work. If decently educated boys will not take up the career of an elementary-school teacher, the situation should not be met by a reactionary recurrence to, or a continuance of, out-of-date methods. Nor should this be made an excuse, veiled or open, for doing harm to secondary education in general by unduly prolonging the date of its commencement.

In conclusion, it must be said also that there is room for a more consistent and unanimous practice amongst the heads of secondary schools.

SCIENCE IN THE DAILY PRESS.¹

By PROF. R. A. GREGORY.

JUDGING from statements commonly made in newspapers—not only in daily papers but also in weekly periodicals in which greater accuracy might reasonably be expected—there are few literary people who have a knowledge of natural objects and phenomena equivalent to that of children in the State schools. It is scarcely too much to say that, omitting signed articles by experts, few newspapers make any announcement relating to a scientific subject without committing a mistake. Either terms are wrongly used, or a matter of common knowledge among men of science is regarded as a remarkable discovery, or observations of a sensational kind are presented to the public as if they were established truths, though they await confirmation from the scientific world, and are mostly unworthy of serious consideration.

It seems to be too much to expect literary people to possess an elementary knowledge of science, or to have any sympathy with scientific precision, but it is not unreasonable to ask for accuracy of description when they are dealing with natural facts and phenomena. They may reply that Shakespeare was often at fault in matters pertaining to natural history; but he at any rate reflected in his works the best knowledge of his time, which is more than can be said of most writers to-day.

We are often told that men of science should cultivate the art of literary expression, but the stronger necessity for literary men to have at least a nodding acquaintance with the outstanding facts of natural knowledge is overlooked. A well-known author has unkindly said, "The man of science appears to be the only man in the world who has something to say, and he is the only man who does not know how to say it." The retort invited by this remark is that the man of letters frequently has nothing to say, and he says it at great length. The first business of the man of science is to create new knowledge, and not necessarily to clothe his discoveries in a pleasing dress, though he may do so. The facts of science provide material upon which literary art may be exercised, but the two functions of exploration and fine expression are rarely found together.

The methods of accurate observation and cautious interpretation demanded of scientific investigators do not readily lend themselves to attractive description, and the results require more mental concentration to understand them than is usually demanded of a literary per-

¹ From a paper read before the Scientific, Technical, and Commercial Circle of the Institute of Journalists on February 23rd, 1915.

formance. A writer of romance can let his imagination have free play, but when natural occurrences enter into the story they should be presented accurately, if the material is to be used rightly. It is the easiest thing in the world to be deceived by appearances, or to accept a belief without inquiry into its foundations; the scientific plan of asking for evidence, and of limiting statements to those for which good justification can be produced, is much more tiresome, yet it is the only way by which truth can be attained; and that after all is the highest aim.

Misconception as to the cause and character of many phenomena in Nature; the tendency to accept statements without inquiry into the credentials of the author or independent investigation of the facts; and the view that science is an esoteric study beyond the comprehension of most people, are almost as prevalent now as they were in former times. The book of Nature is open for all to read, yet few look into it and fewer try to understand what is written.

There is a common impression that the conclusions arrived at by men of science are of the nature of beliefs, and have, therefore, no firmer basis than that of conviction. Nothing could be farther from the truth. From his earliest days the student of science is trained to ask for evidence before arriving at a judgment; and he should hesitate to pass an opinion upon a subject with which he is not familiar. Any beliefs he may hold as to natural phenomena belong to quite a different category from that of knowledge gained by the critical examination of observed facts. No subject is too trivial for inquiry, and no relationship must be regarded as impossible from *a priori* considerations, but the scientific mill must have material to work upon before the value of the product can be estimated. It is permissible to doubt whether the grain is worth grinding, but not to deny it a trial; for without a test any belief may be held as to its quality. Whether we doubt or believe is of no consequence whatever in scientific things if we cannot give reason for the position we occupy. There must be facts and there must be thought about them before any statement of substantial value can be made as to natural objects and phenomena.

Popular impressions and beliefs relating to weather are often based upon casual observations, and have little foundation in fact. Yet every belief of this kind is worthy of examination, and if it has not been investigated no man of science is justified in asserting that it is untrue. But when such an inquiry has been made, and the evidence has failed to support popular opinion, we cannot do other

than state that the case has not been proved. Two such examples may here be given; one as to alleged change of climate and the other as to a connection between the moon and the weather.

Many people believe that the British climate has undergone considerable changes in comparatively modern times. "The winters (or the summers) are not what they were when I was young," is a statement frequently made; but when meteorological records are examined, they show that the temperature, rain, snow, frost, and like atmospheric phenomena are much the same at the present time as they were in the early days of the declining generation. Going back so far as trustworthy observations with meteorological instruments exist, no evidence can be found to justify the common belief that the climate of England has changed.

Tradition, and general impressions of elderly people, are, indeed, of little value in deciding whether any permanent change of climate has taken place. The only trustworthy test is provided by records of rainfall, temperature, or other meteorological observations made systematically with suitable instruments. Such records go back 150 years or so, and when they are examined critically they are found to give no decided indication of any progressive change, either for the better or worse. From an examination of old records, and of the long series of observations made at Greenwich, Sir John Moore was able to show to the British Association in 1908 that no appreciable change has taken place in the climate of the British Isles during the past six centuries.

The only definite association that can be regarded as established between changes of the moon and weather is that thunderstorms are slightly more frequent near New Moon and the First Quarter than near Full Moon and the Last Quarter; and it is noteworthy that this is overlooked completely in proverbial philosophy.

So far, however, as earnest investigations have been carried out with the purpose of associating the weather with the various phases and positions of the moon, no connection has been found definite enough to be of service in the actual work of weather prediction.

Many educated people believe rain follows great battles, the general opinion being that the noise of the guns or the burning of the gunpowder in some way affects the clouds, and causes them to precipitate their moisture. But as the belief that great battles cause rain was held long before the invention of gunpowder, and is, indeed, mentioned by Plutarch, it is evident that the explanation is unsatis-

factory, and only presents an ancient theory in modern terms.

So persistent and widespread is the fallacy, that as recently as the year 1911 a member of the House of Commons asked the First Lord of the Admiralty in Parliament "whether he would arrange for the fleet to carry out their heavy gun-firing practice round the coast at some other period of the year than in the middle of the harvest-time, when the resulting heavy rain may cause serious loss to the farming community." The reply was that "there is no evidence that the firing causes heavy rain," but this only meets belief with denial. Though the argument is not strictly scientific, perhaps the most convincing form of reply to those who profess to believe, or do believe, in the efficacy of gunfiring to produce rain, is to point out that the firing of big guns is carried on at Shoeburyness more frequently than at any other place on the coast, yet the mean rainfall at Shoeburyness, and on the coast of Essex generally, is the lowest in the British Isles.

It is commonly believed that during severe thunderstorms a bolt is sometimes discharged from the clouds and reaches the earth as a solid mass of stone or metal. There is, however, not a particle of material evidence in support of this belief. No thunderbolt originating in the clouds has ever been found, and none exists, whatever conviction may be held to the contrary. What are mistaken for thunderbolts as popularly understood are peculiar mineral objects, meteorites, or particles of soil or rock which have been fused by lightning striking the earth through them.

Almost every newspaper report of a volcanic eruption contains a reference to "flames and smoke" issuing from "the burning mountain," though this description of the phenomena is completely inaccurate. During an eruption there is practically no flame, and certainly none that can be seen except close to the crater; no smoke such as issues from a chimney is ever produced; and there is no burning in the ordinary sense of combustion as in a fire. These elementary facts have been taught to thousands of school children for the past twenty years, yet popular writers and journalists seem still to be unaware of them.

Uncritical observation and hasty conclusion are responsible for the reports of the occurrence of living frogs and toads enclosed in blocks of coal or other hard rock, or in clay many feet below the surface of the ground. A stone is being broken by a quarryman, a frog is seen hopping about close to the place, and forthwith the lively imagination of the labourer persuades him that he has seen it actually come out of a cavity in the rock.

Dean Buckland made experiments for the purpose of ascertaining how long frogs and toads could live shut up in cavities of stone and excluded from air and food, with the result that most of them were dead within a year, and none survived more than two years. Yet frogs are alleged to have been found enclosed in rocks which, geology teaches, were deposited under water millions of years ago, and afterwards subjected to a pressure which has crushed all the fossils contained in them as flat as paper. If geology is right, the frog stories are utterly incredible. Or, as a distinguished geologist once said, the blow of the hammer that disclosed a live frog inside a block of stone without an opening would at the same time destroy not only geology but the whole fabric of natural science.

Writers in the popular press, and in technical papers also, frequently indulge in cheap sneers at what they call "scientific theory." In their minds, the man of science lives in a world far removed from the realities of life, and knows little of material things or practical possibilities. Nothing could be more incorrect than this view. With the exception of pure mathematics and metaphysics, every branch of physical and natural science depends for its progress upon practical work in the laboratory or the field. No one appreciates the value of experimental work more than the man of science, and no one is more critical of scientific theory. Whenever a theory is put forward in any scientific society, it is always subjected to severe attack from people most competent to point out its weaknesses; and in any case it only survives until some one brings forward evidence which completely disproves it.

The public likes to believe that men of science predicted from theory that this or that thing was impossible which was afterwards achieved; and its literary guides usually associate a great discovery, not with the man whose work in the laboratory or study led to it, but with the man who made a commercial success of it. It was the mathematical work of Clerk Maxwell and the practical experiments of Hertz which produced wireless telegraphy, but to the popular press the only man responsible for this wonderful discovery is Mr. Marconi.

When Wilbur and Orville Wright commenced their experiments in artificial flight, the only exact experiments they could find as to the resistance of the air to machines driven at different velocities were those made by a man of science, Prof. S. P. Langley. They were the pioneers of sustained flight with aeroplanes, and they acknowledged that their con-

fidence in the practical solution of the problem was derived from Langley and his work.

It is constantly stated that artificial flight would have been accomplished long before if engines light enough to drive them had been available, but that is not the case. Flights with two, three, or more passengers show that lightness of the motor is not the only consideration, and motors with equivalent weights were available ten years before the Wrights designed their man-carrying aeroplanes. It was by following the scientific guidance of Langley, and using mechanical ingenuity to extend it, that they were able to give practical effect to the desire of man to rise above the clouds.

In these and all related matters, our guides and counsellors, not only in the periodical press, but also in less ephemeral publications, are, in the great majority of cases, unaware of the most obvious facts and phenomena of Nature, and have no acquaintance with the most elementary vocabulary of science, or outlines of scientific discovery. In everything that relates to the material universe around them, they are blind leaders of the blind; and they call their darkness light. They are in-

different to the wonderful growth and extent of scientific knowledge, and live in a paradise in which rounded phrases and curious fancies are of more importance than actual facts. In such a world a one-eyed man can be king. A more enlightened view will only be obtained when it is realised that an educated man must know something of science as well as of literature.

Paper Work for Little People. By Ethel Warhurst and M. Catherine Woods. 70 pp. (Charles.) 3s. net.—Contains nine designs based on paper tearing, fifteen designs based on paper cutting, and seventeen paper modelling designs. We do not like the last set with their full directions and detailed drawings. Such work is most valuable when really inventional.

OUR WHEAT SUPPLIES.

By B. C. WALLIS, B.Sc., F.R.G.S.

THE main facts concerning wheat production in the world and in the United Kingdom have become so well known that it seems almost unnecessary to re-state them. For the sake of precision, however, the following summary of the situation may be presented. The world produces annually about 3600 million bushels of wheat, and, since harvesting operations occur somewhere in the world each day, we may roughly assume that 10 million bushels a day form the average requirement of the world's consumers of wheat. Although some wheat is harvested daily, there is a concentration of harvesting round the

midsummer periods in each hemisphere; in the north from May to August, and in the south from December to February, occur periods of maximum crops. The Indian harvest follows that of Australia, so that the gap between February and May is partially filled. Partly on account of the date of harvest, and partly because wheat may be stored until it is required, it is arranged that on the average $12\frac{3}{4}$ million bushels shall be shipped weekly

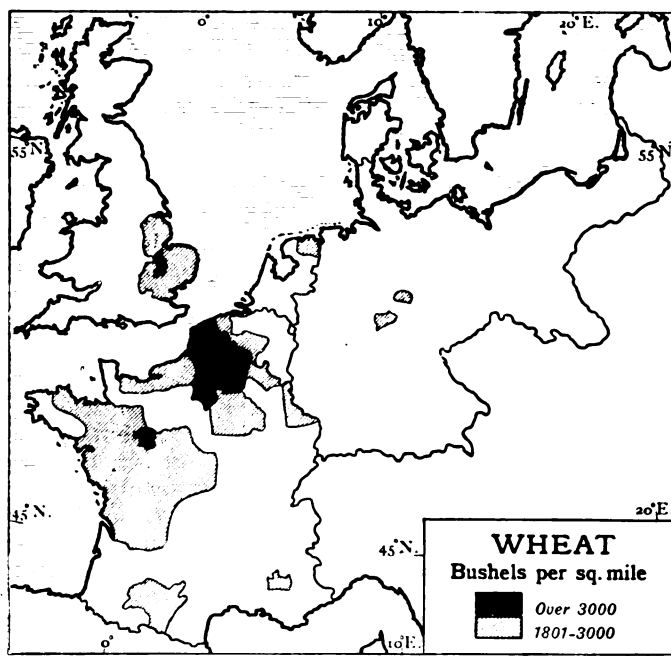


FIG. 1.

from the countries of growth to consumers situated overseas. In occasional weeks this amount may fall to 8 or may rise to 18 million bushels, but generally the shipments vary from 10 to 15 million bushels.

WESTERN EUROPE.

Within the area of Western Europe shown in the map (Fig. 1) about one-sixth of the world's wheat is usually produced, and half this amount may be credited to France. The areas in which wheat production is most extensive are largely confined to the north-eastern corner of France and our own eastern counties. Consequently, France alone can usually manage without imports of wheat. We import four times as much as we produce,

Belgium and Holland each need three times their annual production, and Germany obtains from others an additional 60 per cent. In normal times the situation may be summarised thus: Western Europe produces about 16 per cent. and imports an additional 11 per cent., and therefore uses rather more than a quarter of the world's wheat. It has been shown that about 18 per cent. of the world's wheat normally proceeds from the grower to the consumer by way of the overseas shipping routes, so that roughly two-thirds of the surplus wheat so transported finds a market in Western Europe, and more than half this amount is destined for the United Kingdom. Fig. 2

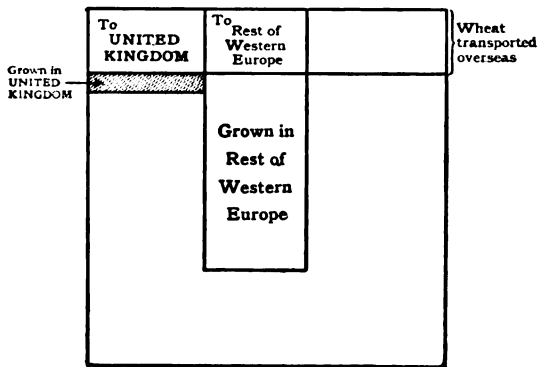


FIG. 2.

indicates graphically the various proportions which have been enumerated.

THE GREAT WHEAT PRODUCERS.

The United States and Russia are the two greatest wheat growers; each produces just over one-fifth of the world's crop—about 750 million bushels annually. The Canadian crop may be reckoned with that of the United States at about 900 million bushels, and, on the average, these two parts of North America

ship overseas about 260 million bushels, *i.e.*, about 5 million bushels per week. Russia exports about half this amount, so that these two wheat growing areas supply between them about 60 per cent. of the wheat which is subject to transport overseas. India produces about 350 million bushels, of which about 12 per cent. is exported and nine-tenths of the exports are sent to the United Kingdom. Argentina supplies overseas about 70 million bushels annually, and thus disposes of roughly half her crop. The Australian crop is variable, but it may amount to about three-quarters of that of Argentina, and usually yields half the crop for export. The Balkan States yield about 100 million bushels and dispose of half the crop to foreign customers.

BRITISH SUPPLIES IN PEACE TIME.

About 60 million bushels of wheat are produced annually in the United Kingdom, and more than nine-tenths of this total is obtained in England. Average imports amount to about 210 million bushels per annum; so that more than three-quarters of our supplies are imported. In recent years the United States has supplied rather less than a quarter of the imports; Canada and Argentina have each sent just above one-sixth, and India and Russia each about one-seventh. The remainder, about 15 per cent., has come from sundry sources, of which Chile and Rumania are the chief.

In a somewhat picturesque way the situation may be summarised: Each Briton consumes 1 lb. of wheat per day; $3\frac{1}{2}$ oz. are home-grown, 3 oz. have come from the United States, and practically 2 oz. have been sent, in each case, by Canada, Argentina, India, and Russia.

The annexed table shows that our imports, at an average rate of $4\frac{1}{2}$ million bushels per week, were, during the last two years of peace, slightly above the average. The monthly

AVERAGE WEEKLY SHIPMENTS OF WHEAT.
(Arranged under the separate months in 100,000 bushels.)

	From:— North America		Russia		The Balkans		India		Argentina		Australia		Total		To:— United Kingdom	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
August ...	76	58	—	21	—	10	3	14	2	11	—	6	82	120	50	42
September...	87	53	—	45	—	14	4	13	2	8	1	5	94	138	42	43
October ...	72	66	1	35	—	11	9	8	1	6	2	5	85	133	47	48
November...	79	67	—	40	—	16	4	8	1	8	—	5	84	144	46	46
December...	90	56	—	21	—	16	3	5	1	5	—	5	95	108	39	37
January ...	92	58	—	16	—	13	3	5	3	16	—	19	98	127	39	50
Aug.-Jan. ...	83	60	—	30	—	13	4	9	2	9	—	8	90	129	43	44
February ...	42	21	—	10	—	10	—	3	—	37	—	21	134	50	—	50
March ...	37	19	—	10	—	10	—	2	—	38	—	22	128	46	—	46
April ...	37	27	—	10	—	10	—	3	—	29	—	13	119	34	—	34
May ...	56	34	—	11	—	11	—	11	—	13	—	13	138	46	—	46
June ...	51	29	—	8	—	8	—	21	—	11	—	11	131	51	—	51
July ...	66	19	—	3	—	3	—	16	—	5	—	6	115	46	—	46
Feb.-July ...	48	25	—	9	—	9	—	9	—	22	—	14	127	46	—	46
The year ...	54	27	—	11	—	9	—	15	—	11	—	11	127	45	—	45

(a) Weekly shipments during 1914-15. (b) Average weekly shipments during the two preceding "cereal years."

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figures indicate the variation in the supplies throughout the year and show low supplies during December and April and high supplies in January and February, when the crops of the Southern Hemisphere become available, and in June, when the crops of the Northern Hemisphere begin to affect the traffic overseas.

THE EFFECTS OF THE WAR.

The table, which has been compiled from the weekly reports in the *Corn Trade News*, shows in striking fashion the effects of the war. Shipments from Russia, the Balkans, and Australia have ceased, and those from India and Argentina have been halved. From North America shipments have been greatly in excess of the normal, and during the first half-year of the war the excess has amounted to 40 per cent. above the average, which means that North America has depleted her stocks very considerably. The crop last harvest was above the average in the United States, so that it may be assumed that the depletion has amounted roughly to one-third of the supplies which are usually exported during the second half-year, *i.e.*, an amount equivalent to a weekly export of almost 2 million bushels.

The United Kingdom has, however, been able to maintain the normal rate of imports, and has been able to make up for the absence of supplies from Russia and Australia and the small supplies from India and Argentina by purchasing a large proportion, if not quite all, of the excess of American exports.

PROSPECTS FOR THE NEXT HALF-YEAR.

The Argentine harvest has been in excess of the average, that of India has been normal, and that of Australia has been poor; total supplies are probably of average amount.

The Russian surplus, equivalent to six months' exports at an average rate of 3 million bushels a week, has been stored, so that while Britain has depleted American stores, there is every prospect of the maintenance of our supplies at the normal value during the next half-year, provided we are able to open the sea-way to Russia through the Dardanelles.

The story of the first half-year of the war in this connection illustrates one aspect of sea power—the defensive, that of the next few months promises to demonstrate the value of the Navy for offensive purposes. The excessive demand forced wheat prices in America above the normal, and we have paid more for our bread; and it is significant that the mere notification of the commencement of the bombardment of the outermost forts of the Dardanelles sufficed to cause an immediate reduction in the price of American wheat.

CULTIVATION OF GERMAN COURAGE: A PARALLEL.

THE current number of *The Educational Review*, edited by Prof. Nicholas Murray Butler (*Educ. Rev. Publ. Co.*, New York, 1s. 8d. a copy) contains among other interesting articles one on the paradox of German university and military ideals by F. H. Swift, and, though a great deal of the information is old, the author writes from so modern a point of view and is so fair to what is best in Germany that it is worth directing attention once more to Kneipen and Mensuren. Drinking and "duelling" are illegal; but, except in Berlin, where they have to keep their eye on the police, they are so strong from tradition that they may be said to be the formative elements in a German gentleman's education. We allow ourselves but one quotation from the diary of the onlooker at a Mensur.

One Paukant I shall never forget. Blood streamed from his scalp, ran down over his forehead, coursed over his eyes, and ran into his mouth. A comrade brought him a drink. As he sipped the water, the blood that ran into it from his wounds turned it rapidly crimson, but he did not appear to mind it . . . There were two men who did appear to be affected by the sight. They were the Testant and the Couleur-diener, the servants attending. From time to time their faces bore signs of nausea, but theirs were the only ones. Their lack of manhood was regarded as excusable as they were only servants, not Herren.

Now all this we know, and have known; and we know also that Germans call our football roh (barbarous), and our lawn-tennis kindisch; further we know that some English ladies attend bull-fights and prize-fights, and take a keen delight in seeing stags finally despatched. "That's what I came out for," said a maiden to a man who had gone behind a rock, *vomendi causa*, when the blood from the stag's throat spurted out; and George Meredith is in his element when the Whitechapel Countess just manages to sit out the fight. We say this because the modern Spartanism is not to be rashly or pharisaically condemned; rather it is to be understood. And *au fond* it is organised and Stoic brutality, undertaken for a purpose, the purpose being the teaching of extreme courage to a naturally timid and over-sentimental nation; "Swelled-headedness" is not only a result; it is a method. There are, as the writer points out, two Germanys; the one patient, accurate, a leader in thought, science, invention, and certain forms of art; quickly, until the beginning of this war, permeating large tracts of the world; the other intentionally Spartan, savage, bestial, but with one intention, to teach courage and the outlook of a gentleman, imposing its imposing outlook

on an ambitious and alarmed nation. The intention, except in so far as it thickens class barriers and is avowedly aimed at world-conquest, is good; the methods are beastly, and tend to bestialise the men who follow them. No more awful condemnation of the methods can be found than in the book published at Leipzig, "Das proletarische Kind."

Now no reader of Herodotus and Aristotle can have failed to see the curious parallel between our own days and 480 B.C. Hellas, the France of to-day, was attacked by an overwhelming force, composed, according to the Greeks, of "barbarians"; the preparations for the attack had been brewing for years. The methods of the Persian army were wildly savage; witness the exit from Sardis between the halves of a dead youth's body. The passage of the Dardanelles was Hunnish. Hellas did the only thing she could do; she made Allies of persons who before were in no allied frame of mind, and she composed, as far as possible, all internal animosities. She sent a devoted band of Spartans to hold the great army for a time in a place she thought defensible, and there, to their eternal glory, they bore the first brunt of the attack. Liège will henceforth be named with Thermopylæ, and Albert with Leonidas. Hellas, or rather one of the Allies, proceeded to perfect her navy, and on sea she won; the great army became disheartened, and the story of the banquet before Plataea points to the certainty of defeat of the Persians even in their own minds. Still closer runs the parallel; for, had Persia the barbarian conquered, the military autocracy enforced on Hellas would have had evil results until to-day. Still further, let us hope, goes the parallel; for when Athens was appealed to to make a separate peace and leave the most hated ally of all at the mercy of Persia, this was the answer given: "Tell Mardonius that as long as the sun shall continue in his present path we will never contract alliance with Xerxes; we will encounter him in our own defence, putting our trust in the aid of those gods and heroes to whom he has shown no reverence, and whose houses and statues he has burnt."

It may be said that a great deal which affords no parallel is omitted, but the similarities are much more striking than the divergencies. Aristotle, in his criticism of Sparta's general outlook, remarks that their law-giver "designed his laws for conquest and war; and this is by experience now thoroughly discredited"; and we cannot forget the strange likeness between the Mensuren and the Lycurean training; yet Sparta saved Hellas or did its share. The moral to be drawn is that courage can be taught, whether by the men-

suren or by field sports; and this moral we think we have again learned in England. But an innate brutality which is foreign to the best traditions of a great nation is, temporarily let us hope, the worst master that any nation can bow the knee to; and it must be destined to receive the amazed condemnation of modern days. The German courage we all admire; but the bestiality in it is likely to bring ruin upon itself. Evil stands in this war self-condemned, and it is not by the power of good but by the excessive evil of evil that evil will be vanquished. The day of the courageous and tyrannical "gentleman" imposing his method on his own favoured class, and his mentality on the despised classes other than his own, is doomed. It was doomed long ago at Crecy.

PERSONAL PARAGRAPHS.

THE Rev. J. A. Tait, housemaster of Weekites, Charterhouse, Godalming, died on March 9th. Mr. Tait was educated at Uppingham School and Oriel College, Oxford. After being at Giggleswick School for a year he went to Charterhouse as a master in 1883, and became housemaster in 1908.

* * *

THE death is announced of the Rev. Edward Davenport, rector of Stoke, Talmage, Oxfordshire, since 1904, and before that for thirty-six years a master at Wellington College. He was educated at Trinity College, Oxford, and played in the cricket match against Cambridge in 1866.

* * *

CAPTAIN LAGDEN has been officially reported missing, but his parents have every reason to believe that he is dead. Capt. Lagden joined the King's Royal Rifles at the outbreak of the war. He belonged to the O.T.C. for many years at Marlborough, Oxford, and Harrow, where two years ago he became a master. He was educated at Marlborough and Oriel College, Oxford, where he was a Rhodes Scholar. He represented Oxford against Cambridge in cricket, Rugby football, racquets, and hockey. He was also a Rugby international.

* * *

MR. A. R. WATSON, a master at the Grammar School, St. Ives, Huntingdonshire, was drowned whilst attempting to rescue a girl who had fallen from her bicycle into the River Ouse at St. Ives.

* * *

PROF. T. P. NUNN, vice-principal of the London Day Training College, has, with the permission of the London County Council, accepted the position of external examiner in pedagogy at the University of London. Prof.

Nunn has recently accepted the chairmanship of the enlarged council of the St. Pancras Nursery School, the third annual report of which has just been issued.

* * *

THE Rev. F. de W. Lushington, headmaster of Dover College, has accepted an Army chaplaincy, and is proceeding to the Continent about Easter. Mr. Lushington, who was educated at Clare College, Cambridge, was a master at Elstree Preparatory School from 1892 to 1899, chaplain at Montreux from 1899 to 1901, chaplain of St. Paul's, Valetta, Malta, in 1901, archdeacon of Malta from 1902 to 1903, and became headmaster of Elstree Preparatory School in 1903, and of Dover College in 1910.

* * *

THE Council of Dover College has appointed Mr. W. S. Lee, headmaster of Queen Elizabeth's School, Cranbrook, to succeed Mr. Lushington. Mr. Lee was educated at Dover College and Wadham College, Oxford, where he won an Open Classical Exhibition. He became a master at Dover College in 1894, housemaster of the Day Boys in 1900, and was appointed headmaster of Cranbrook in 1908.

* * *

MISS EASTMAN, who took Madame Yeatman's School in the Avenue Victor Hugo, Parc de Neuilly, about ten years ago, has now brought her school to Bramhall Gardens, S.W., temporarily. In 1870 Madame Yeatman took a similar precaution.

* * *

MISS W. G. JAMESON, M.A. Edin. Hons. I., formerly modern language mistress at Streatham Hill High School (G.P.D.S.T.), was appointed in January, 1915, headmistress of the Rockhampton Girls' High School, Queensland. Miss Jameson was educated at Edinburgh Ladies' College and Edinburgh University; she was formerly lecturer at Grenoble University and Homerton Training College.

* * *

Two cases interesting to schoolmasters have recently been tried; in both the authority of the headmaster was upheld. In one, his right to inflict punishment on a day boy for breach of rules after the day boys, but before the boarders, had left for the holidays had been called into question; in the other the severity or unreasonableness of the punishment was the cause of the proceedings. In the latter, the circumstances were such that the boy's housemaster protested, and has, in consequence, been dismissed; he is a young man, almost a beginner, and is to be congratulated on having the courage and strength to uphold his convictions.

MR. HENRY SAMBLE STALEY, of Campbell College, Belfast, has been appointed to the Indian Educational Service as inspector of schools in the Central Provinces. Mr. Staley was educated at Burton Grammar School and Emmanuel College, Cambridge; he is a member of the Assistant-masters' Association.

* * *

MRS. WOODHOUSE has been the recipient of a testimonial consisting of a cheque and a handsomely bound volume containing the names of the subscribers, and the subject of expressions of appreciation and admiration from a very large number of prominent educationists. Mrs. Woodhouse, who retired from the position of headmistress of the Clapham High School for Girls in 1912, has served the cause of education with devotion and distinction for thirty-five years.

* * *

SIR JAMES DONALDSON, whose death is announced, was an example of the old-fashioned Scottish education, which produced so many notable men before it came under the influence of examinations made in Germany. He was educated at the famous grammar school of Aberdeen, and at the universities of Aberdeen and Berlin; here, again, his course was typical of his own and the next generation, whose outlook was widened by study abroad as well as at home. His chief work was probably done in the Edinburgh High School, of which he was rector from 1866 to 1881; but he was afterwards Professor of Humanity in Aberdeen, and in 1890 principal of the university. He published a number of books, the best being in the department of church history; "A Critical History of Christian Literature and Doctrine from the death of the Apostles to the Nicene Creed" was published in 1864-66, and he was joint editor of the Anti-Nicene Christian Library. He also wrote on the history of education in Prussia and England. He was knighted in 1907, and died at the great age of eighty-four.

ONLOOKER.

EX ORE INFANTUM.

WE are reprinting some lengthy quotations from a rather remarkable document¹ issued by the Education Officer of the London County Council, and a few prefatory comments on this document may not be out of place. It is a report of the Chief Examiner on the examinations for the Junior County Scholarships; the subjects reported on are English and arithmetic. It is the English to which we wish to refer, and indeed to one

¹ London County Council: Report of the Chief Examiner on the Examinations held in November and December, 1914, for the Award of Junior County Scholarships (1915).

part only of the English. In one paper were set the following questions :—

1. Write a letter to the sun, and his reply.
2. A boy climbed over the wall of an orchard and got up into a large apple-tree. The owner saw him, and when the boy was not looking, placed a large and natural-looking stuffed dog at the foot of the tree. The owner then went back into the house and watched what the boy did. Continue this story.
3. Tell what you know about (a) steam, (b) apples, (c) butter.

Now, putting aside the punctuation of question 2, and the necessary ordinarieness of question 3, anyone will say that these attempts to get at the child are good; and it is very satisfactory to find that, with an exception or two, the examiners are intensely delighted (this is no exaggeration) with what the children in their schools have produced. We quote a remark or two :—"The power of fancy and imagery was quite remarkable." "It was impossible to anticipate or realise how varied, fresh, and original are the ideas of these young children." "An increasing number use clear, varied and sometimes vivid language." "I am profoundly impressed," says the Chief Examiner, Mr. G. F. Daniell, "by the freshness and spontaneity of expression, the humour, poetic fancy, dramatic sense, the range and variety of conception, the initiative and resourcefulness of the young essayists whom my colleagues and I have had the good fortune to examine."

The reader will have the opportunity of seeing in the following pages on what these words of eulogy are based. Most of the examiners pay a thoroughly well-deserved tribute to the efforts of the teachers, and exact and careful speech, good grammar, a marked difference between correct English and home English, receive their proper praise. One examiner only doubts whether the result is due to teachers, and one thinks that the accuracy is too painful. Indeed, the *ipsissima verba* of the examiners, frankly quoted by the Council with names attached, repay careful study in respect of small but definite divergencies. But the moral we wish to draw is not that of the Chief Examiner. We take the child's point of view, and are in our turn surprised at the Chief Examiner's amazement.

We should have thought that anyone who takes the trouble to watch children in their own habitats, to collect the spontaneous utterances of ordinary children, the original fairytales, essays in natural history, letters, and the like, written by these young people *when freed from the cramping influences of school,*

might have prophesied the letters and the essays referred to and quoted in the following pages. The books of Miss Nesbit, Mr. Cooper, Mrs. Logan, poor Richard Middleton, Carl Ewald, Mr. Archbald, and many others, all of whom base their work on the study of live children; the remarkable child-book on animals plagiarised by *Punch*; the beautiful words of a poet of seven lately written on in the *Poetry Review*; the innumerable gems privately collected from infants' schools, and even from special schools; the experiences of Mr. Homer Lane and his followers; the lost but well-authenticated poetry and prose of Pet Marjories who had no *horae subsecivae* to immortalise them; all these plead vigorously the child's silent claim to the possession of powers not yet fully known to the professional student of the child.

If these seem brave words, the late publications of the Perse School prove the contention to the hilt; and any committee of elementary-school teachers would support it. But the child is amazingly secretive, and utterly unable, as well as unwilling, to put forth his power when told (poor mite) to enlarge on Friendship, Wordsworth's Ode, The Ocean, or other such contraptions of adultism. The explanation of the result, on which every child-lover congratulates the Chief Examiner, is simple; some child invented the questions set (except the third question), and the children rose to the bait. Until children are taught by children we shall not get at children. The New Testament told us this long ago; but the New Testament as a book of methodology for teachers is a little neglected. To the teacher who regards all this as rhodomontade, Maxim Gorky's story, "The Essay," may be recommended, although the conclusion may seem rude; for it will be remembered that Gorky went and hung the teacher in his own cravat.

I have noted from some of the reports of examiners a few of the postal addresses ascribed to the Sun :—

- Palace Beautiful, Sky World.
- Golden Mansions, Skyland.
- Solar System Road, Space Street, Nowhere.
- Shiny Villa, Tropical Row, near Uranus.
- Up in the Sky, Ever So High.
- Sunbeam Place.
- In the Middle of the Earth-path, In the Clouds.
- Rainbow Palace.
- 2 Hot St., Sunbeam, Sunland.
- Blue Sky House, The Heavens.
- Mercury Square.
- The Heavens, All Over the World, N.E.S.W.
- To the Sun, Over Mountains, over Hills, it is there that you will find him.
- No. 4 Heaven's Gates, Heavens.
- Burning Villa, N.S.E.W.
- Fleecy Cloud House, Blue Lane, Skyborough.

Sunny Mansions, The Sky.
 Cloud Villa, Star Path, Sky.
 No. 1 The Planets.
 Somewhere in the Sunny Sky
 72 Sundial Road, The Air.
 Summerset, Sky.
 100 Heaven Mansions.
 The House of Gold, Heavens High.
 Sky Place, Sola Sistome.
 Royal Palace, Sun's Kingdom.
 In the Sky, Over England.
 Light Lodge, Sky.
 The Universe.
 The Middle of the Sky—at twelve o'clock.
 The Sun Hotel, Sky.
 The Upper World.
 79 Dreamland, Sky.
 1 Sunbeam Lodge, Sun Dale.
 Sun, Sky, World of Space.
 19,000,000th Milestone.
 The Milky Way.

A girl imagined herself to be the first leaf on an oak tree in spring, and wrote from "The Top Twig, Oak Apple Tree, A Sunny Day," asking the Sun to give her a companion. The reply came from "The Blue Heavens," and was brought by a skylark. With perhaps characteristic contrast a boy wrote from "No. 6 Laboratory, Greenwich Observatory." Various postmen were pressed to serve, e.g., the Wind, Mr. Sparrow, a fairy who slides down a sunbeam, a moon-fairy of the Milky Way. A somewhat matter-of-fact young person sent an aeroplane—"I hope the driver won't be burnt." More severely practical and less humorous children explain the answers they receive by saying that father found the original letter to the Sun and wrote an answer in joke. Very few sceptics rated the examiners for proposing an impracticable action.

Some of the weakest candidates, instead of writing letters, gave a talk about writing, or a dialogue. In fact, the reply from the Sun was beyond the powers of the lower half. The ordinary candidate wrote requests to the Sun to shine on specified occasions, expressions of a wish to be with the Sun, asked questions (to which the Sun replied) about the size and distance from the Earth, etc. About eight to ten per cent. referred to the War in one or both of the letters. The best answers took a definite line. Some wrote poetic little essays—often the writer thanked the Sun in gracious-spirited phrase. Some made appeals to the Sun to shine in at the window of an invalid—the Sun replies that he is afraid the street is too narrow; but he will try to send one of his messengers, the rays. A childish interest too neglected by teachers is betrayed by the girl who thus explains her gratitude—"You teach us to make shadows of all descriptions." For contrast there were not a few examples of terse humour. Thus the Sun, being asked to shine at 4 a.m., replies that the request is sheer impertinence. Perhaps the palm for brevity must be awarded to "Sun, you are very great, and give much heat and light." "I know I do." It would perhaps be a mistake to credit the author of the last-quoted with dry

humour, but this was not lacking in the boy who made the Sun complain of having to use a magnifying glass to read the correspondence—"make the letters a mile long next time." In one letter the Sun is asked to give plenty of light to the Moon so that the streets may not be dark. In fact, the topics range from matters of domestic interest such as blistering the front door or the arrival of the new baby to a survey of the European War. Sometimes an account was written of the origin of the war; such accounts were clear and correct reproductions of a school-lesson—quite praiseworthy, and bearing evidence of intelligent comprehension. Occasionally one got an expression of a boy's own view—"the Germans are about the most furious set of curiosities in Europe." As a rule the children are sensible of the gravity of the struggle and express a desire that peace should come speedily and put an end to the terrible bloodshed and suffering. They are entirely confident as to the issue, although they seldom say so in so many words. A vindictive spirit appears in a minority of references and is nearly always inspired by thoughts of the sufferings of the Belgians. Mr. Pearson quotes the following: (a) "I shine on Germany as well as on the Allies' countries because God made me shine on every country. I shine on Germans' crops because if I shine only on the Allies' crops it would not be fair to the Germans." (b) "The Germans are driven back at all places and the bravery of the Allies is marvellous." (c) "Dear Sun, Shine upon the unhappy Belgian refugees so as to cheer them up at the hour of leaving their so loved country. Shine upon the soldiers who are in the trenches or who are in hospital suffering from their wounds." . . . "I have seen the terrific fighting of the Allies and the enemies. I have seen the barbarous acts of the enemies too." (d) "I am very glad to hear your brother is fighting for his king and country." (e) "Then how do you think I am going to the war, when I can't find one tailor who can make a khaki the right size?" It was probably an indirect influence of the war that only one instance has been reported of a reference to the transit of Mercury, which was happening during the examination. There were several allusions to the classical Mercury—a boy wrote, "Mercury the messenger of the gods gave it to me," while a girl addressed the Sun as Phaëbus, and another alluded to the story of Phaëthon. The following are selected, not as the best all-round efforts, but as very favourable examples of the varied ways in which question 2 was handled:

Dear Mr. Sun,

Little children are always glad to see you looking down on them for they can go out and play. We are always quite glad to see you in the summer when we have our holidays for the day seems far brighter. Of course it would never do if you never hid your face and let the clouds take your place in the heavens. If the little raindrops never kissed the brown earth the golden corn would never ripen and after a while we should all starve but look at us and give us light as long as it is possible and then say "Good Bye" for a time.

Hilda.

Dear Girlie,

It is quite right what you said to me and I shall look on you as long as I can. I like to see you playing merrily and happily but I do not like to see you cry. It is a pity I cannot watch you at Christmas more when you have so much pleasure. I should simply enjoy to see you at each others' parties playing "Blind Man's Buff" and the like. But let me see if on Christmas morning I cannot send you a present. Shall I wake you early so that the light of my face may able you to see your presents better?

(Let us imagine that I am an owl.)

The Poplar Tree

The Wood

Essex, S.W.

Sir

I am very sorry to complain but your light causes me much misery. Could you not direct your rays in the opposite direction. I can only see by night and have to leave my bed to capture the small animals upon which I feed. I should be very pleased if you would write to the moon asking of her the same. At present I am in a weak condition because of the scarcity of food.

I am

Yours faithfully

The Owl.

This is the reply of the Sun, delivered to me by the postman, Robin.

Sir

I regret to say that I cannot help you in any way. If I shine my light in the opposite direction the people on this side of the Earth would always be in darkness. The Moon refused to reply to my letter, polite as it was. Believe me to be

Your friend and adviser

The Sun.

Dear Mr. Sun,

I hope you are quite well, for I see you shining brightly as usual. Would you mind telling me where you go to at night? I do so want to know, because the stars are not big enough to know, and Mr. Man in the Moon only smiles at me as much as to say, "Little girls should not ask questions." I know you will tell me, Mr. Sun, because you are always a kind man. I also have another question to ask. Could you tell me where the stars go in daytime? When night comes on, I cannot ask the stars themselves, or Mr. Man-in-the-Moon, because I have to go to bed early, as it is getting near winter. Please try and sent an answer quickly, as I want to keep this letter secret, and not let mother know until I get a reply.

Your curious little friend,

Eva.

The Sun's reply.

Dear Eva,

I shall be very glad to answer your questions. At night, I go to the other side of the world, and shine there until it is time to come back. This gives the people at the other side of the world a day instead of a night. When you are just getting dressed, the people on the other side of the world are just getting,

undressed. Now for the other question. The stars, in day-time, are just where they are at night, only you cannot see them, because the light which I give out completely swallows them up. I have no time to write any more just now, but I will explain more fully when I write you another letter.

Your everlasting friend,

Mr. G. Sun.

I wrote a letter to the Sun, addressed thus :—

"To His Majesty the Sun.

Monarch of all the planets,

stars and moon."

Then I wrote :—

"To the Sun,"

"What are you? you are a radiant mass of some gaseous substance that gives light and warmth to all humanity, animals, birds and vegetation. What are you? I say again, some people, astronomers, say that millions of years ago, we, that is our world and many other planets and stars were flung off you as you were whirling round and round. Now, Sun, I shall expect a definite reply soon.

One, a mortal, who is

fascinated by your

brilliant light."

Some time after I received a reply, it ran like this :—

"Oh Mortal,

Your thirst for knowledge of me is very gratifying and thus I have condescended to reply to you, I am, as you suspect a mass of gaseous matter and I marvel how it is you know this as you have never been near me. I watch and see the marvelous progress you have made in that world of yours, but I will say no more, so farewell for ever Oh Mortal, your friend

the Sun.

"O great and mighty Sun! I am one of your weak subjects, but perhaps you will grant the people in this land a petition.

In these days we get so much sunlight that our crops wither and die, and our fruit spoils before our eyes. Stop, we beseech you, this burden of sunlight, hide your face from us for a few days, and weep, so that the fruits of our land shall drink in thy tears and be refreshed. I have finished."

Reply. "To the bold person who asks this thing, I will answer "Yes." The fruits of your land shall be refreshed.

For seven days shall I hide my face and weep; with my tears shall come the roar of thunder and the flash of lightning. When the seven days have expired, I shall show my face to you in all its radiance till Winter comes."

Some letters afford glimpses into the puzzles which beset a child's mind. A little girl tells the Sun "I very much envy you, for there is nothing your bright eye doesn't see. You are loved by everybody when you shine. It is very curious how you are made to shine by our God and no mortal can make you out. . . ." And the Sun replies, "You must not envy

me, and besides, I have my faults as well as everybody else. One day I shine and another I do not. That is a fault although I cannot help it. People hardly ever think of me although it is through me they can go out and enjoy themselves. You have got your position in the world, and God thinks it suits you. You cannot alter God's work. Remember that. From your friend, The Sun." The remark "*That is a fault although I cannot help it*" may induce some serious thinking.

In the cosmogony of many children the sun is *en rapport* with Paradise or even situate in Heaven itself. "Give my love to all the angels, moon, stars and God." For them the Heavens have not gone afar off and become astronomical. On the other hand, the following shows great skill in solving the problem of using scientific knowledge in carrying out a literary exercise of a highly fanciful kind.

Wandsworth, S.W.

Britain,

The Earth,

2 : 11 : '14.

Dear Sun,

I am writing to ask you if you could tell me if there are any people in Mars, and if the lines we see through our telescopes are really canals. On our Earth the astronomers cannot tell, and would like to know. I wish you could tell me. I myself should like to know something about you.

On our Earth we are the midst of a terrible war. I wish you would help our side to win, but I suppose you cannot.

Farewell for the present, however. I will write later on.

Yours truly

Eric.

The Sun,

7 : 11 : '14.

Dear Eric,

I am very sorry I cannot give you much information about Mars. As I am old, very, very old, I cannot see very well, or I should not have to say I could not see Mars. I can tell you much about myself, however.

I am about 96,000,000 miles away from you. You can guess I am very hot to be felt at that distance. Some of my flames would go three times round the earth. Some of the substances in me are never found on the earth. Coronium, which is found in my corona, or crown, is one. Sometimes the moon gets between me and you. Perhaps you have seen an eclipse.

But I have written too much already, so "goodbye."

Yours affectionately

The Sun.

There was too much ignorance of the Sun's movements; many wrote as though the sun did not shine at all in this country in winter, or as one examiner put it, "the sun was regarded as a hibernating animal." Having regard to the fundamental influence of the sun's radiation on all human activity, a sounder knowledge of the sun's movements is desir-

able. Also it is a pity that there is no evidence that the children are aware of the value of sunlight as an ally against disease, notwithstanding the tuberculosis campaign. The movements of the moon were, as is not surprising, even less known than those of the sun—indeed ignorance in this direction is practically universal and perfect. There were some pretty descriptive touches which showed that the teaching of English had not been a failure—"The moon would not shine over London because it was foggy and she had just washed her face."

The following is an unusually good example of versatility, the difference in the handling of the themes of questions 2 and 3 being strikingly appropriate.

"As I gazed at the Sun, I seemed to feel very sorry for him. He looked so very forlorn and dull, and also very sad. So, I thought I might communicate with him, therefore I immediately sat down and wrote him a letter. It ran as follows: Dear Mr. Sun, Why do you look so unhappy? I feel so sorry for you—extremely sorry. You did not come out yesterday—no, and I felt so lonely without you. And yesterday was Sunday, and as the people walked into the parish church, they sighed and said "What a dull day!" From your loving Playfellow. Well, When I had written this, I ran out into the garden, and placed it in a semi-sunny position. Mr. Sun glanced at my letter, and then he was hidden from view by a great, dark grey cloud. But I heard him mumbling, and this is what he said, "Oh dear! Oh dear! I'll tell you why I do not shine. The wicked grey clouds keep teasing me, and stop 'my children' from smiling! And oh! The terrible war on earth—I cannot bear to look at it, and the soldiers wonder why I don't shine oh dear!" Then I knew, and I felt even more sorry for him. But I was compelled to go indoors, and soon after, a terrific thunderstorm rent the air; and I sighed again—"Poor Mr. Sun!"

"Ha! ha!" chuckled the owner—Mr. Gates, "what a fright for him; I'll teach him—young boulder—not to steal my apples!" Presently the boy began to descend, but what was his astonishment and fright, to see a vicious-looking dog below him. "Gracious!" he cried, "A dog—I'm done for!" "Bow-wow gr-r-r!" cried Mr. Gates, imitating the barking of a dog. "Oh! oh! Help! help!" cried the varmint, as the apples he held fell from his grasp. "Gr-r-r," cried Mr. Gates again. They boy shifted to and fro, to and fro, till the branch upon which he was seated, swung back, and hurled him head-first into the owner's open door—bang! "Got you!" cried Mr. Gates, and caught the amazed boy in his arms; and I can tell you, the thief went away with rather a sore back, and when I say he went away, I mean he never returned!"

Many candidates showed a similar adaptability of attitude, but with less power of dramatic construction and expression. Instances of maturity of style are not uncommon—here are two instances, both from boys' papers:

"For some time the boy did not know what to do. Then he thought of a plan. He began to throw apples down at a good distance from the dog. His

strategy entirely failed. The dog did not run after the apples and give him a chance to get home. At last he lost his temper and threw the apples *at* the dog. As this made no visible effect he threw marbles, tops, notebooks and various other miscellaneous articles which he happened to have in his pockets. When this failed to arouse his canine enemy, he began to suspect the true cause. He climbed down until he was in reach of the dog, when he kicked it over.

Realising the trick that had been played on him, he jumped down and ran home, leaving the astonished owner to collect his dog and go on with his work."

Cases of too exuberant verbosity are infrequent, but the next quotation shows to what lengths this fault can go:—

"Climbing the tree, he was just about to take a nice apple when the keeper, a quaint, grotesquely humorous, agile and smart man appeared. He was elegant, aristocratic in manner and hospitable. He was lithe-limbed sagacious and ferocious with a level head. He possessed self-reliance and coolness. Placing a natural-looking, valiant, ferocious dog with keene teeth, glinting murderous eyes, epimagraphic claws and lithe limbs, he went away chuckling.

As soon as the boy's eyes fixed upon it, he gave vent to a piercing, quavering, intolerable, impetuous yell. His pulses quickened, he made frantic gesticulations and his eyes seemed to start from their sockets. With a monosyllable of help he wrung his hands impassionately. He relinquished his hold of the branch and fell. Realising his fate, he thought his doom was sealed. To his dumfounded surprise, he laughed at his folly, when, the dog never moved. But as he went away, he was turned abrupt and stared awkwardly into the owner's face. He was afterwards, to his gratituded, forgiven, and he went away gratified."

Truly our hero had reason to be gratified at his release from lithe-limbed sagacity backed by epimagraphic claws. Perhaps so perilous a situation would not have arisen but for some unguarded lessons on the choosing of adjectives.

HISTORY AND CURRENT EVENTS.

THE great siege war still continues in the west, and many of us are naturally interested because of private and personal ties with those in the trenches, but, at the moment of writing, public interest is more with the war on the eastern frontiers of Germany and Austria, where the tide of battle flows backwards and forwards in astonishing ways. We are becoming familiar with strange and almost unpronounceable names of places, and are learning geography both on a large scale and in detail such as we never conceived before the war. What, then, is this huge frontier world? What is its previous history? In the Middle Ages Poland joined with Lithuania and became a large kingdom, extending from the Baltic almost, if not at times quite, to the Black Sea. Converted to Christianity in its western form, it fell under

the influence of the Holy Roman Empire, became still more chaotic than its prototype, and fell into such disorder that in the end of the eighteenth century it was partitioned among its neighbours.

THE part of Poland which fell to the Hohenzollerns in the first partition (of 1772) was that district known as West Prussia, a district much desired by them because it connected their Mark of Brandenburg with the district formerly known as Prussia and now called East Prussia. This country, the name of which is of doubtful origin, had been conquered in the Middle Ages by the Crusading order known as the Teutonic Knights. The order fell into difficulties, partly with their suzerains the Kings of Poland, and a Hohenzollern Grand Master dissolved the order at the time of the Reformation, making the country into a duchy for his family. The duchy fell by inheritance early in the seventeenth century to the Margrave of Brandenburg, and in the war of the Spanish Succession the Margrave-Duke gave his services to the Austrian Emperor in return for the right to call himself King in Prussia, which lay outside the boundaries of the Holy Roman Empire. It was not until after the Napoleonic Wars that the name Prussia received such wide extension.

WHEN Brandenburg gained West Prussia, Austria was ruled by the Empress-Queen Maria Theresia, and it is interesting to watch, in the course of the negotiations which ended in the first partition of Poland, the play of forces between the would-be conscientious woman and her colleague-advisers, Joseph, her son and successor, and Kaunitz, her chancellor. Whatever her scruples, the Austrian acquired a district roughly corresponding to what is now Galicia, and at the very end of the transaction added to her gains the small country of Bukowina, because, weary of further strife, her rivals did not care to dispute this rounding off of Galicia's eastern boundary. Bukowina had belonged to the Principality of Moldavia, then a dependency of Turkey, and as it was "Turkey's fault" that had caused the policy of Polish partition to be adopted, no objection was raised to this extreme example of opportunist, dynastic politics.

TURKEY itself, at least in Europe and Africa, has now almost entirely been partitioned, and the allies, Britain, France, and Russia, are proceeding, in ways unprecedented, to complete the process. What memories are aroused as we read of the forcing of the Dardanelles and of the approach to Stamboul! Our forces must be operating in the neighbourhood of Troy, the often renewed city which was restored to history by Schliemann, and students of ancient Greek story will think of the Chersonese, of Xerxes, and of Aegospotami. What would the heroes of those distant times think of our modern methods of warfare? To tell of Stamboul and all its story would take volumes. Byzantium, Constantinople, Mickelgarth, each name that the ancient city has borne recalls a period in world history. Is the time at last approaching when the priest who withdrew into the walls of the Church of the Holy Wisdom (S. Sophia) in 1453 with the elements of the Holy Eucharist will again appear?

ITEMS OF INTEREST.

GENERAL.

THE annual conference of the Association of Headmistresses will be held on Friday and Saturday, June 11th and 12th next, at Walthamstow County High School.

NOTICE is given by the War Office that an Army entrance examination will be held on June 29th next and following days. Forms of application will be furnished on request by letter addressed to the Secretary, Civil Service Commission, Burlington Gardens, W. These forms should be completed and forwarded before May 15th. At this examination there will be open to competition:—(a) Not less than 125 cadetships at the Royal Military Academy, Woolwich (for the Royal Artillery and Royal Engineers); (b) not less than 300 cadetships at the Royal Military College, Sandhurst (for the Cavalry, Foot Guards, Infantry, and Army Service Corps). The competition will be conducted in accordance with the regulations issued in November, 1911, except that no oral or practical tests will be included in the examination. To be eligible to compete for admission to the Royal Military Academy, a candidate's age must be such that he will have attained the age of 16½, and will not have attained the age of 25, on July 1, 1915. To be eligible to compete for admission to the Royal Military College, a candidate's age must be such that he will have attained the age of 17, and will not have attained the age of 25, on that date. The contributions usually paid by parents of cadets at the Royal Military Academy and the Royal Military College will be dispensed with in the case of candidates admitted as a result of this examination. This will not affect the payment of £35 required for the provision of uniform, books, etc. A sum not exceeding 3s. a day will be contributed from Army funds towards the cost of each cadet's messing, washing, and contingencies. Camp kits are issued in kind at the academy or college. Outfit allowance of £50, from which the cost of the camp kit will be deducted, is issuable to cadets on appointment to commissions. A limited number of cadetships in the Royal Navy and supplementary first appointments in the Royal Marines will also be open to competition, and will be awarded to candidates who fulfil certain conditions laid down by the Lords Commissioners of the Admiralty. Particulars may be obtained on application to the Secretary to the Admiralty, Whitehall, S.W.

ONE of the many social problems raised by the war is that of the employment on farms of children of school age. The debate in the House of Commons, and the correspondence columns of the leading newspapers, bear witness to the anxiety felt on this question in many quarters. On one hand we hear the contention that there is a serious shortage of labour in agricultural districts, that town labour imported into these districts is of little value at any price, and that the imminence of spring sowing makes the matter urgent. It is also said that the difficulty of language stands in the way of employing foreign (e.g., Belgian) labour; and it is pointed out that the employment of the children of a locality raises no

difficult housing problem. On the other hand, it is said that the farmers are prospering, and can afford to pay for adult labour, that women's labour is at their disposal, and that much can be done by means of labour exchanges, especially as many trades are suffering badly through the war. Unfortunately, the debate in Parliament did not elicit the outstanding fact that no class is more in danger of being deprived of the advantages of education than the children of agricultural labourers. The whole history of elementary education in England is a standing proof of this statement. Further, the period between the twelfth and the fourteenth years is a fateful one for these children. To be kept away from school during that period is an infinitely greater loss to the poor man's child than to a child whose education can be continued until the age of sixteen or eighteen. And to crown all, the shortage of labour is not likely to be temporary, because the young labourers who have enlisted and seen the world are little likely to resume their old cramped lives when the war is over. A more permanent solution of the problem ought to be found. A reactionary educational policy would indeed be a strange cure for the ills which the war will leave behind it.

SECONDARY schools situated in country districts have not hitherto responded much to the encouragement given by certain local authorities to rural or agricultural courses. This reluctance is not unnatural, and is due to causes of which the Board of Education shows some appreciation in its recent "Memorandum on the Curricula of Ruralised Secondary Schools" (Circular 883). In the Board's view the correct policy is that of giving a rural bias to the curriculum, without making it too technical or vocational. It is one thing, for example, to include in the chemistry course some study of the soil, but it is another thing to begin and end with such a study. The ruralised curriculum, says the Board, should be practical rather than vocational. It should suit, not only the future farmer, but also the future teacher or trader. And as to organisation, a system of alternative subjects, or the institution of an "agricultural side," is, in the Board's judgment, inferior to a uniform ruralised curriculum in small country schools. The Circular only touches on the examination difficulty, which is at present obviously formidable in this connection. Several pages of the Circular are devoted to exemplifications of the effects upon different subjects of "ruralising" the curriculum.

THE Board of Education has issued the regulations under which grants are payable to local authorities in respect of the provision of meals for children in elementary schools under the Education (Provision of Meals) Acts, 1906 and 1914. The maximum grant payable is one-half of the expenditure incurred under the Acts by the local authority. But the grant may be less, or it may be withheld altogether, in cases where the Board's conditions are not satisfied. In assessing the grant the Board will take into account the extent to which the work is co-ordinated with that of the school medical service, the care exercised in the selection of children, the nature of the dietary, the attention given to the educational aspect of the

work, the service and supervision of the meals, the arrangements made for ascertaining the effects of the meals on the physical and mental condition of the children, and the economical administration of the work.

THE Teachers' Registration Council has received 5,500 applications for admission to the register, and the number of certificates of registration issued up to February was 5,400. Since the beginning of the year the number of applications has shown that the movement is gaining strength, although much remains to be done before the register can be said to include a due proportion of the qualified teachers of the country. It is not sufficiently realised that the register indicates the extent to which teachers as a body are willing to sink minor differences and prejudices in order to support a professional council, composed solely of teachers, and including men and women duly elected by associations which represent every form of teaching work. The Council has made an important modification in the conditions of registration. As originally devised, these provided only for the registration of teachers who were engaged in universities, colleges, schools, or similar educational institutions. The private teacher was thus excluded from the register. It has now been found possible to arrange for the admission of private teachers under special conditions as to attainments and satisfactory experience.

THE Teachers' Registration Council has had before it a scheme for the establishment of examinations committees to consider existing examinations for teachers of technological and other special subjects. Under the conditions of registration which come into force after 1920, evidence of attainments satisfactory to the Council will be required, and the proposed committees will advise as to the examinations which may be accepted. Arrangements for the publication of the first official list of registered teachers are being made. In order to afford the time needed for the final stages of preparing the volume, it will be impossible to include in the first list the names of those who apply later than April 15th. It is hoped, therefore, that all who intend to register will send their applications before that date.

At the meeting of the Senate of the University of London, held on February 24, the report of the Military Education Committee for last year was received, showing that since the outbreak of war 773 cadets or ex-cadets of the Officers Training Corps and 156 graduates or students recommended by the University had been gazetted to commissions in the Army. Adding 189 commissions obtained by cadets or ex-cadets before the war, a total of more than 1100 is obtained. With reference to the proposals for the establishment of a Military College in the University, the report states that, since the outbreak of war, the matter has necessarily been left in abeyance. The strength of the University contingent of the Officers Training Corps is being well maintained, and a system of intensive training for commissions is now in operation.

IN moving the second reading of the Universities and Colleges (Emergency Powers) Bill, which was

agreed to by the House of Commons on March 2nd, Mr. Asquith gave some interesting facts as to the efforts made by Oxford and Cambridge undergraduates in connection with the war. The number from each university serving in the Army and at the front is approximately 6,000. The total number of undergraduates in residence at Cambridge a year ago was 3,181. It is now 1,227. The figures for Oxford are approximately the same. This means that two-thirds of the undergraduates from the two great Universities have volunteered for service, and are now serving their country in the Army. At Oxford, eighty-nine members of the staffs of the colleges are on active service. Out of the eighty-nine "blues," the flower of the athletic world, in the year 1913-14, there are eighty on active service. Nearly all the physically fit undergraduates in residence both in Oxford and Cambridge have joined the Officers Training Corps. Many of the University buildings both in Oxford and Cambridge have been given up for military purposes. At Oxford the examination schools are used as a hospital and officers are housed in Trinity, Balliol, Keble, Worcester, and Magdalen. Of the 1,900 Oxford undergraduates who are serving about 500 are scholars and exhibitioners. In Cambridge the Eastern General Hospital occupies the recreation grounds of King's, Clare, and Trinity. Trinity buildings are used for soldiers' quarters and King's for nurses.

CERTAIN colleges in Cambridge are being utilised for Belgian and French refugees, who are being given free residence and tuition. At Christ Church, Oxford, whereas the average number of undergraduates is 220, there are now fewer than fifty in residence. Trinity and Oriel have only twenty-one, and Magdalen thirty. At Cambridge one illustrious college has dropped from 256 at this time last year to forty undergraduates at the present time. These are men who have all gone in one way or another to serve their country in the war. At Cambridge the fees normally payable in the scientific department of the University are £26,000 a year; and it is estimated that this year less than £15,000 will be paid; while other fees, usually amounting to £35,000, the University authorities estimate will be no more than £15,000.

At the annual meeting of the Institute of Chemistry Prof. Meldola, the retiring president, criticised the Government proposals for establishing a national dye industry. He insisted that the problem to be solved is primarily chemical and not commercial in character. Chemists have prepared some five hundred different dye-stuffs of definite composition, of which only a certain number can be made in this country. The Government scheme provides for new and enlarged factories, but unless something more is done there will still be after the war an outstanding number of other products which have never yet been made here, and for the working out of these processes no combination of "business" talent alone is of the slightest value. It is by chemical research alone that our colour industry can be saved. To suppose that we can retrieve our position by starting a company the directorate of which is to consist solely of business people is, Prof. Meldola says, ludicrous. The Government promise of a grant for ten years of "not more

than £100,000 for experimental and laboratory work" is a welcome concession, but who is to direct that research? Experts are to be subordinated, and their assistance is to be invoked at the discretion of a board, the members of which can have no real knowledge of the conditions necessary for producing the materials required. The policy of attempting to run a highly specialised and rapidly developing branch of organic chemical industry by a company of business people with expert assistance when required will prove fatal if it is intended to establish the industry permanently here. It must be more realised in this country that for success in all such highly technical industries, where it is of paramount importance to keep abreast of the progress of research, there must be an intimate and cordial association between the expert man of science and the specially trained man of business—each able to supply precisely the qualities in which the other is weak.

THE new buildings of the Department of Household and Social Science of King's College for Women are now nearing completion. According to the *Times*, the department will take possession of them in October, and the present rooms in Kensington Square will be closed. Already £100,000 has been subscribed towards the erection and equipment of the buildings, and another £40,000 is still needed. Of the money subscribed £60,000 has been given for endowment and £40,000 for the building of a hostel and laboratories. The hostel, which has been named Queen Mary's Hostel for Women Students, contains sixty-three bed-sitting-rooms, and the fee for board and residence is sixty guineas a year for a session of about thirty weeks, divided into three terms. A composite fee of eighty-five guineas is arranged for students taking the household and social science course. In addition to the laboratories and similar rooms, the teaching portion of the hostel contains a large kitchen, laundry, and pantry equipped with modern appliances and adapted to the needs of large institutions or small homes. The courses include biology, chemistry, physics, hygiene, physiology, household work (cooking, laundry, and housewifery), economics, ethics, and psychology. The aim is to treat all subjects connected with the household both scientifically and practically.

THE interim report recently issued by the Dominions Royal Commission contains useful information on the resources of Newfoundland. The report points out that the solution of the international problems connected with the fishing industry, the greatest asset of the Colony, has not resulted in corresponding activity in development on the part of the Newfoundland Government. Much remains to be done by official action in connection with the cod fisheries; for example, an investigation of the decline in the Labrador fishery, attention to the possible extension of markets caused by the opening of the Panama Canal, and the development of a trade in fresh fish. In order to conserve the forest lands of the Colony, measures should be taken, the report says, to regulate the conditions on which cutting of timber is permissible, and the laws for protection against forest fires should be rigidly enforced. The hematite ore deposits at Bell

Island are considered of immense potential importance to the iron and steel industries of the United Kingdom and Canada. Newfoundland is unlikely to become a participant in a fast Transatlantic service, but the Commissioners are far from satisfied with the present state of its communications with the Mother Country. The exceptional position of Newfoundland as a cable centre renders it urgent that the Colonial Government should consult with the Imperial Government and the Governments of other Dominions when new concessions are asked for by cable companies or existing concessions fail to be renewed. Great progress has been made in Newfoundland in the erection of coastal wireless stations, and the Commission suggests that the benefit would be increased were the charges lowered on messages from ships sent through the Cape Race station. The establishment by the Anglo-Newfoundland Development Company of a large export trade in pulp and paper is the main cause of the striking increase during the past three or four years in the shipments of articles other than fishery produce.

ARRANGEMENTS have been made by the committee appointed by representatives of most of the associations of teachers in elementary and secondary schools to hold a service in St. Paul's Cathedral on the evening of Ascension Day, May 13th, at 6.30 p.m. All members of the teaching profession are cordially invited. Tickets of admission are not required. In view of the fact that the date for the service this year falls at a time when the nation will, in all probability, be passing through perhaps the fiercest and most terrible stage of the war, the committee is of opinion that it may most fittingly take the form of a Service of Intercession in connection with the war. It is hoped that the whole congregation will join in the very simple music which will be included in the service. It is essential, however, that there should be a choir to lead the congregation and to render the anthem, and members of the profession (both men and women) with good voices and some experience of church music are therefore invited to send in their names to the organist, Mr. Alan May, 31 Bonham Road, Brixton Hill, S.W., not later than April 15th, indicating the part they are prepared to take.

REFERRING to our notice last month of his collection of songs published by the Patriotic Publishing Co., Mr. P. A. Scholes directs our attention to the fact that the title of the pamphlet is "The Salute of the Flag, together with Special Songs and Ceremonies for Time of War. Compiled by P. A. Scholes," and not as we printed it (vol. xvii., p. 113). He adds that the songs are incidentals, the patriotic exercise being the essential part of the booklet.

SCOTTISH.

By the death of Sir James Donaldson, principal of St. Andrews University, Scottish education has lost one of its most distinguished and venerable figures. He took a very deep and practical interest in all grades of education, and made several valuable contributions to the discussion of educational policy and methods. Principal Donaldson attained to his high position after climbing practically all the rungs of the educational ladder. Tutor, class master, headmaster, professor,

and finally principal of the oldest of our universities, he remained a teacher to the last, and never lost an opportunity of showing his keen interest in, and sympathy with, his professional brethren. He was an ex-president and honorary fellow of the Educational Institute, and the first editor of the *Educational News*. On his leaving Edinburgh, the Lord Provost of the day declared that the position and influence of Dr. Donaldson as rector of the High School were not inferior to those of Dr. Arnold at Rugby. The advance made by St. Andrews University during his reign was remarkable. Apart from the union with Dundee College, additions were made to the United College greater than the original buildings. The Bute Medical School and the Gattay Marine Laboratory have both been added. Students' union halls have been erected for both men and women students, and a magnificent hall of residence for the latter. It is not too much to say that had it not been for his wisdom and prescience St. Andrews University would have declined to the level of an American college. "He found it brick; he left it marble."

A MEMORANDUM has been issued by the Education Department directing attention to the shortage in the supply of fully qualified teachers owing to the fact that eight hundred members of the profession have joined some branch of the Imperial Service. In the circumstances the Department states that it will be prepared to give sympathetic consideration to managers who may be confronted by difficulties in regard to staffing. As emergency measures it is prepared to agree to the re-entry into service of retired and pensioned teachers, to accept as teachers in small schools persons with qualifications similar to those accepted for such schools, Art. 19 D(a) of the Code, and to waive the demand for professional training in the case of teachers of higher subjects. The Department must be satisfied in every such case that every reasonable effort has been made, including the offer of an adequate salary, to secure a teacher with the full qualifications.

THE Code for Day Schools for 1915 has been issued, and, as was generally expected, contains no important modifications on last year's regulations. The proposed reduction in the maximum number of pupils in a class has again been deferred to a more convenient season. This proposal first made its appearance in a minute of March, 1911, and was embodied in the Code of 1912. Since then it has occupied a prominent place in each successive Code, but school managers have ceased to take it seriously, and believe that the present crisis has given it the *coup de grace*. The Education Department has certainly suffered much in prestige by its action in this connection. It believes firmly in the principle of reduced size of classes, but year after year has yielded before the threats of school boards and voluntary-school managers. Instead of withdrawing the clause until it was prepared to enforce it, the Department has kept it dangling before teachers as an earnest of its good intentions but weak will. In this year's Code the Department has made another *volte face*. The payments of grants by instalments has been foreshadowed by recent Codes almost as often

as reduced size of classes, but here again much opposition has been offered by various school authorities, and the Department again has felt compelled to yield. In future grants will be paid only once a year as formerly. The Department is not wholly to blame here, as all the large school boards pressed the alteration upon it, but in future it would be well advised to examine more thoroughly the consequences of its proposals before embodying them in Codes and minutes.

AN important decision has just been given in the Court of Session in the case of *Campbell v. the Muiravonside School Board*. In February, 1914, the School Board granted to Mr. Campbell, schoolmaster, a pension of £38, in addition to what came to him under the Superannuation Act. A school board election took place shortly afterwards, and a majority was returned pledged to rescind the resolution granting a supplementary pension. This the new School Board did in June of last year, and the schoolmaster appealed to the Court of Session to declare their action *ultra vires*. Lord Anderson, before whom the case was tried, had no difficulty in decreeing against the board. The original grant of a pension he held to be a perfectly legal act, which could not be treated by subsequent boards as a mere scrap of paper.

MR. J. M. HOGGE, M.P., who takes such a deep personal interest in Scottish education, has issued a pamphlet in which he pleads for the appointment of a Royal Commission on Education in Scotland. Referring to educational administration, Mr. Hogge asserts that it is too bureaucratic. In spite of Scotland's often expressed wish that the Education Department should be removed to Edinburgh, the Department still remains in London. These and many other defects Mr. Hogge hopes would be removed by the creation of a Royal Commission. He considers the present a suitable time for making the proposal because during the war, and probably for some time after, no changes involving large expenditure will be practicable. It is to be feared, however, that war is a catastrophe that swallows up everything but itself, and people would not listen to a Royal or any other Commission at the present time, charm they never so wisely.

THE committee of the Scottish Teachers' Fund for War Relief has during the past month allocated a sum of £1,500 as follows:—Prince of Wales Fund, £700; Scottish Belgian Fund, £400; Belgian Soldiers' Fund, £50; Scottish Red Cross, £100; Women's Hospital in Serbia, £50; and Work for Women Fund, £200.

IRISH.

No intimation has as yet been given either by the Government or by the Intermediate Board as to the manner in which it is proposed to carry out the rules for the application of the teachers' salaries grant of £40,000, so that it may be expended on its avowed object, viz., the salaries of registered lay teachers. The grant is now available for last year, and will shortly be distributed to the schools, and it is important that steps should be taken in the first year of its distribution that the interests of the lay teachers

should be safeguarded. Intermediate schools are justly entitled to larger grants for upkeep and maintenance, but in their own interests they should keep this claim distinct from that of the present grant, which should be devoted honestly to the most deserving and important object for which it has been given. It would only be a short-sighted policy from an educational point of view which tried to divert it to some other use however praiseworthy. In Ireland it is not sufficiently realised that the labourer in the class-room is worthy of all the increased hire that the £40,000 grant can afford him.

THE Senate of the National University announces that the date of the commencement of the matriculation examination this summer is postponed from June 15th to June 25th. The change is made to prevent any clashing with the Intermediate examinations, as many intermediate students of the senior and middle grades will, in the ordinary course of things be matriculating this summer.

THE annual general meeting of the Central Association of Irish Schoolmistresses and other ladies interested in education was held at Alexandra College, Dublin, on March 12th. An account of the Conference of English Teachers held at Stratford-on-Avon last August was given by Prof. W. F. Trench, professor of English in Dublin University, and a paper on the teaching of history was read by Miss Jones, head of the Training Department, Alexandra College.

THE Department of Agriculture and Technical Instruction has issued a form dealing with the summer courses of instruction for teachers for the coming summer. The courses, with one exception, will begin on July 6th, and close on July 30th. The exception is the course in rural science for National School teachers, which will begin on August 3rd and close on August 27th. Teachers will be allowed a sum of £3 10s. for expenses while living at the centre.

THE courses will be more numerous than ever, numbering twenty-one in all. They are as follows:—(1) Chemical manufactures, mainly for teachers of chemistry in technical schools; (2) testing and working of electrical machines for teachers and assistant-teachers of electrical engineering in technical schools; (3) technology for teachers of introductory English and mathematics in technical schools, the object being to indicate to teachers of introductory courses in technical schools the character of the specialised instruction which their students are likely to take up in succeeding sessions; (4) office routine and business methods for teachers giving instruction in commercial subjects; (5) practical mathematics and mechanics for teachers of building trades and engineering subjects; (6) manual training (metal work) for teachers of manual instruction in day trades preparatory schools; (7) furniture design for teachers of cabinet-making and woodwork; (8) wheelwright's work for teachers of woodwork in rural districts; (9) life drawing and figure composition; (10) lithography for those who attended a similar course in 1914; (11) lettering and illumination; (12) coloured embroidery; (13) advanced cookery

for instructresses in urban technical schools; (14) advanced dressmaking; (15) hygiene and sick nursing; (16) lace-making, crochet work, and sprigging for teachers who attended a similar course in 1914; (17) experimental science for teachers in secondary schools. —Courses will be held in the second year syllabus and in each of the special courses of the Department's programme, and the course in the second year syllabus will be the last summer course of instruction in the preliminary course of experimental science.—(18) drawing and modelling; (19) domestic economy; and (20) manual training (woodwork) for teachers in day secondary schools; (21) rural science (including school gardening) for certain National School teachers.

WELSH.

THE Board of Education's Circular on Examination, the effect of which promises to be so far-reaching, is at last beginning to receive the consideration due to its importance. That it has not done so before is due partly to the preoccupation caused by the war and partly to the very restricted issue of copies of the Circular. The combination of the two post-senior examination stages will rouse little protest; it is already arranged that there shall be only one examination, with arrangements for distinction in each subject; this examination will be accepted subject for subject as equivalent to the Intermediate examination for the Welsh degree. Much more opposition is likely to be aroused by the proposal to substitute for the present junior examination the school record book. In Wales at least, the junior certificate, though it denotes a quite elementary stage of culture, has a certain value as a recommendation to employers and as a means of entry to the elementary branch of the teaching profession; also it is extremely difficult to be honest in a full record if it is to be a true account of a boy's work, career, and aptitudes—there is danger both to the boy and to the master.

EXTRACTS from the experiences of an unsuccessful candidate for a scholastic post in South Wales:—“Every candidate,” he said, “was distinctly informed that canvassing, directly or indirectly, would be a disqualification.” “And in order that you might all be disqualified, you set about ignoring the rule?” “Quite so. It would be unfair—dishonourable almost—if we were not all disqualified from the start. In fact, the members of the Education Committee encouraged it. You see, I had to canvass; it was my only means of making myself known to them. I had to risk being disqualified. . . . On the whole I was well received, and nearly everyone I saw promised me his support. I expected to be at least on the short list, and I had a faint vision of securing the post. But I didn't get through the first lap even!” “I was bombarded with questions. That was natural, and I expected it; but there should be a limit to questions. I told them my age and my qualifications, and gave the necessary information without demur, and in my innocence I had a vague idea that I had made an impression; but when they asked if I had a wife, how many children I had, if I had been vaccinated, and so on, I thought the limit had been reached. It

hadn't, though. Here's a set of questions asked me by one member whom I saw privately:—

"Do you go to church or chapel?"

"Do you take any interest in church work?"

"Do you take any interest in politics?"

"Are you a Liberal or a Conservative?"

"Have you taken part in local politics?"

"Whom have you helped locally?"

"Do you believe in the Disestablishment and Disendowment of the Church in Wales?"

THE account in a South Wales paper from which the above is abridged concludes:—"I learnt several things on my rounds. The Education Committee know next to nothing about education and less about teachers. In their selections they do not ask the officials to guide them. They vote for those who are able to pull the strongest and the largest number of strings. Inspectors' reports are seldom read; and head-teachers' recommendations go unheeded. I know what I'll do though, and I feel certain I'll get on the short list next time. I'll join a religious organisation, get elected a member of a political club, and become a Freemason!" This may be supplemented by instances known to the writer from different parts of Wales. In one case a lawyer wrote in answer to a letter inquiring about local conditions. "You know how much religion, or what passes for such, has to do with these appointments." In another case a member of a county education committee said: "Mr. —, it's not a bit of good. In the first place, you don't possess the necessary local influence in that valley." The information was given in kindness, and was fully appreciated, but the giver seemed quite unconscious that the state of things it disclosed was a public scandal.

THE North Pembrokeshire Teachers' Association recently passed the following resolution:—"We are of opinion that scholarship classes held after school hours are unprofessional, uneducational, and unfair."

THERE are eighty-two candidates for the position of successor to Mr. Reynolds as headmaster of Cardiff High School. This is a contrast to the usual state of things—"an applicant for every pound in the salary." It may be that many are deterred from applying by the rumour that certain well-known men are doing so, and that the field in which success is possible is thereby likely to be restricted. At least one Glamorgan headmaster is said to be in the field; report has it that a successful and popular London Welshman would not sorrow to be brought down to Cardiff, and that the chief inspectorship is likely to remain within a day's walk of that town, if Cardiff gets its own way.

PROF. MILNER-BARRY recently wrote to an applicant for a testimonial:—"I feel it my duty to try and discourage appointments of men of military age, who are physically fit, to masterships in schools. Teaching work can be done efficiently by women and men over forty in the present crisis." There is little to quarrel with here except the last four words in their application to the previous four. Why "in the present crisis"? If being above forty years of age should be a bar to scholastic promotion it should also be a bar to membership of education authorities.

PROF. H. W. LLOYD TANNER, who had been on the staff of University College, Cardiff, since its foundation in 1883, and retired from the chair of mathematics and astronomy in 1909, died at Exeter on March 6th. He had a distinguished career at Bristol Grammar School and Jesus College, Oxford, and on his retirement was granted a civil list pension in acknowledgment of his eminent merits as a teacher and a supporter of the cause of education in Wales.

OWING to the war, the Bangor National Eisteddfod was postponed for a year. At a meeting of the executive committee held on March 6th, it was decided, on the recommendation of the finance committee, to hold it in the first week of August next. The choirs and bands which had originally entered for competitions had been consulted, and it was found that at least half had renewed their entries, and out of these the great majority preferred August to the alternative date in September.

COLONEL DAVID DAVIES, M.P., of Llandinam, has undertaken to provide a permanent endowment for the chair of colonial history at Aberystwyth College, at a cost of £350 a year. He is also giving twelve acres of recreation ground known as the "Vicarage Field," to the college. A valuable collection of Swansea and Nantgarw china, the gift of the late Lady Williams, has been placed in the college museum.

SWANSEA is paying £4,000 a year to teachers serving with the colours, and is proposing to meet the expenditure in part by cutting out the cost of prizes and contributions to library and sports funds. In some South Wales schools the boys have voluntarily given up their sports.

THINGS NEW AND OLD IN PEDAGOGY.

- (1) *Bishop Burnet as Educationist*. By J. Clarke. 244 pp. (D. Wyllie.) 4s. net.
 - (2) *History of Elementary Education in England and Wales*. By C. Birchenough. 394 pp. (Clive.) 4s. 6d. net.
 - (3) *Survey of Elementary English Education*. By E. B. R. Prideaux. 206 pp. (Blackie.) 2s. net.
 - (4) *Principles of Secondary Education*. Edited by P. Monroe. 790 pp. (New York: The Macmillan Co.) 8s. net.
 - (5) *Journal of Experimental Pedagogy and Training College Record*. December, 1914. (Longmans.) 1s. net.
 - (6) *Principles and Methods in Commercial Education*. By J. Kahn and J. J. Klein. 439 pp. (New York: The Macmillan Co.) 6s. net.
 - (7) *Handbook of Vocational Education*. By J. S. Taylor. 221 pp. (New York: The Macmillan Co.) 4s. 6d. net.
 - (8) *Annual Report for 1913 of Chief Medical Officer of Board of Education*. 366 pp. (Wymans.) 1s. 8d.
 - (9) *Year Book of Open-Air Schools and Children's Sanatoria*. Edited by T. N. Kelynack. Vol. i. 444 pp. (J. Bale.) 7s. 6d. net.
 - (10) *The Open-Air School*. By H. Broughton. 188 pp. (Pitman.) 2s. 6d. net.
- (1) Of the "things new and old" which form the subjects of these notices we will begin with the oldest. It appears that Bishop Burnet, known to fame chiefly

as a historian, wrote a short tract on education, which was published posthumously in 1761, but has since then sunk into an oblivion from which Mr. Clarke now rescues it. The tract was written before the bishop-to-be was five and twenty years of age, and its importance is much reduced by the writer's plentiful lack of experience. Still, as Mr. Clarke says, "at a time when we are seeking to reconstruct the broken links of educational history," it seems worth while to give the little treatise a place beside Milton's "Tractate" and Locke's "Thoughts." We very much doubt, however, whether the editor was justified in doing his work on so elaborate a scale as to result in some 170 pages of biography and comment to fewer than 80 pages of text. A shorter and cheaper book would, we think, have done adequate justice to Burnet's youthful effort.

(2) The history of English education during the nineteenth century is now a common subject of study in training colleges, and with very good reason. We are getting far enough from the mountain to be able to see it in its true proportions. Besides, there is no better way of leading students to see the value of educational history than by showing them how the organisation and methods of the present arose out of those of the immediate past. There was a place for Mr. Birchenough's book, and we think he has supplied the place extremely well. Sir H. Craik and others had told the story of gradual State intervention in education, but Mr. Birchenough seeks to show also what was actually going on inside the schools during successive periods of the century. We are not convinced that he was wise in separating entirely these two aspects of his task, because they are often very closely connected, and cross references are tiresome. Still, that is a matter of opinion. The author had equipped himself well for his task, and the care and accuracy with which he has performed it are obvious on every page.

(3) In his "Survey of Elementary English Education," Dr. Prideaux treats the same theme briefly and slightly, and, we must add, with a smaller degree of authority than that to which Mr. Birchenough is entitled. We think it unfortunate that the writer of a manual of this kind should have such an extraordinary appetite for figures as that possessed by Dr. Prideaux. Often the figures will mean nothing to the student who reads them, because he has no standards of comparison. Besides, blue-book statistics are not history, but only part of the raw material upon which the historian is supposed to work interpretatively. The author's arrangement of his material—a vital matter in the writing of history—leaves, in our opinion, much to be desired, because it tends to obscure the connection between closely related facts. Still, the material put together by Dr. Prideaux is solid and accurate, and his book will be found useful, especially by those who may be alarmed at the size of Mr. Birchenough's.

(4) Our readers are familiar with the kind of treatise on secondary education which consists of chapters contributed by specialists, under the supervision of a general editor. The latest example is from America, and has been edited by Prof. Monroe, well known in connection with the "Cyclopædia of Education." The earlier chapters of the book deal with the meaning, scope, and history of secondary education, and with the existing secondary-school systems of Europe and America. Then follows a timely chapter on the psychology and hygiene of adolescence, and another on moral and religious education. The rest of the book discusses the several subjects of secondary-school instruction (not omitting the fine arts and music, the household arts, vocational instruction, and

physical education), and winds up with a forecast of future reorganisation of secondary education. Some of the chapters are taken from the "Cyclopædia of Education," whilst others are written specially for this work. The book is obviously a difficult nut for any one reviewer to crack. We observe that it keeps to the high level of principles, and does not attempt to descend to details. We observe also that the editor's hand is apparent throughout, as it should be. Each chapter, for instance, is uniformly followed by a list of references, and a number of problems for further study—features which will add to the value of the treatise as a text-book. We have not the smallest doubt that "Principles of Secondary Education" well deserves attention in our secondary training colleges.

(5) The December issue of *The Journal of Experimental Pedagogy and Training College Record* very well maintains the growing reputation of that enterprise. The journal stands as the sole English representative of the newer work in experimental pedagogy, and we are glad to know that it compares favourably with similar foreign productions. It does not, however, confine itself to this kind of work; witness, for example, Mr. G. F. Bridge's excellent and timely paper on text-books of history and literature, a paper well worth the attention of all teachers of those subjects. On the experimental side, Dr. Ballard writes on norms of performance in the fundamental processes of arithmetic, and Mr. Winch discusses whether young children should be taught arithmetical proportion. The weakness and danger of the experimental method seems to us well exemplified in Dr. Boyd's paper. He has experimented with a somewhat artificial substitute for examinations, but in the end admits that his substitute yields no certain indication that the student has prepared the work assigned! He concludes that his "combination method" test "can never completely take the place of the ordinary examination." Our own conclusion would have been much more strongly expressed. The experimental barque should be steered by the rudder of common sense.

(6) The commercial element that now enters into much of our secondary and higher elementary instruction is still almost entirely at the empirical stage. Certain of our younger universities provide facilities for training persons for the higher branches of business, but it is as true of England as of America, that "practically nothing has been done to give prospective teachers the pedagogical foundation without which the mastery of the subject alone is inadequate to fit them for the highest attainment in their profession." To further the adequate study of the subject, especially in regard to secondary schools, is the aim of Messrs. Kahn and Klein in their "Principles and Methods in Commercial Education." The first part of the book expounds general aims and principles, the second part takes up in order the several subjects of commercial instruction, and in the third part some special problems are discussed. We think that the psychological portions of the first chapter do not rise to a high level, but on the whole the book seems to us a sound piece of work, and is to be welcomed as an effort to treat its subject scientifically.

(7) Another important topic that causes much solicitude to the thoughtful student of recent tendencies is that of "vocational education," on which subject Dr. J. S. Taylor, of New York, provides us with a hand-book. The spectacle of "the unemployed or involuntarily idle, the imperfectly employed or the untrained, the improperly employed or the acquisitively rather than productively employed, and the voluntarily idle,

commonly known as the leisure class," has raised questions to which vocational education, rightly understood, provides a promising, if only a partial, answer. But, as in the more special case of commercial education, we need broad surveys, such as will help us to see where we are and whither we are tending. Dr. Taylor first passes in review what has been done for vocational education in the chief civilised countries, and then goes on to discuss the place of industries in school instruction, the problem of continuation schools, the training of vocational teachers, vocational guidance, and so on. The book is a useful summary of its subject.

(8) Turning now to school life on its physical and hygienic side, we note the annual report for 1913 of the Medical Department of the Board of Education. Not much is to be gathered from mere figures, but we may state that the total number of children medically inspected during 1913-14 was approximately 1,830,000, out of 5,365,000 in average attendance at elementary schools in England and Wales. In the 317 areas for elementary education 841 school medical officers (including assistant school medical officers) are employed, and in 275 of these areas one or more school nurses are also employed. Successive chapters of the report deal with infant welfare, the physical condition of school children, tuberculosis, stammering, the school clinic, dental disease, special schools, open-air education, the teaching of hygiene, and the provision of meals. As the report states, whatever degree of success may attend the nation in the present war, the cost in life must inevitably be heavy, and it is therefore more than ever necessary to care for the physical fitness and equipment of the rising generation.

(9) A special and an important aspect of the same theme is dealt with in the "Year Book of Open-Air Schools and Children's Sanatoria," to the first volume of which we have pleasure in extending a welcome. The book contains full and trustworthy descriptions of the various open-air schools, children's sanatoria, and other agencies providing for open-air care and instruction in this country. But, as the editor justly remarks, it is something more than a mere directory. It contains a large number of original communications and critical surveys, all written by well-known authorities, besides descriptions of schemes actually at work in different localities at home and abroad. Some idea of the care which has been lavished upon the book may be gained from the fact that it contains upwards of 180 illustrations. The year-book should be of great assistance to members of the school medical service, to education authorities, and to officials of societies and institutions. We cordially wish the enterprise success.

(10) Whilst the imposing year-book deals with the open-air school from the outside, so to speak, and as a big problem of national organisation, Mr. Broughton's little work deals with it from the inside, and from the teacher's rather than from the medical expert's point of view. With this qualification, we dare say that Lady St. Helier, who writes a foreword, is pretty well within the mark when she states that this book contains "all that is worth knowing about open-air schools," the author having "assisted almost from their creation." The first part discusses questions of organisation—buildings, baths, dormitories, furniture, staff, feeding, and sleeping. The second part takes up the several subjects of the curriculum, and shows how the teaching of them is modified, and sometimes benignly transformed, by the special circumstances of the open-air school. The work is liberally illustrated, and the hand of the practical and enthusiastic expert is apparent throughout.

THE NEW OXFORD TEXT OF LIVY.

Titi Livi, Ab Urbe Condita. Recognaverunt et adnotatione critica instruxerunt R. S. Conway et C. F. Walters. Tomus I. Libri I.-V. Scriptorum Classicorum Bibliotheca Oxoniensis. (Clarendon Press.) 3s. 6d. (paper), 4s. (cloth), or 5s. 6d. on India paper.

THIS new Oxford text of the first five books of Livy fully justifies the expectations which articles in the *Classical Quarterly* and elsewhere had aroused. It is thirteen years ago since Prof. Conway first undertook the work, and it is he who is chiefly responsible for these first five books, just as Prof. Walters is to be for Books VI.-X.; though, of course, both editors have been at work upon collating different MSS. For example, Prof. Walters in 1902 collated the "Codex Harleianus," until then always cited, as by Drakenborch, "ex commentariis Casleii," and found that many false readings had been accepted either from the errors or from the silence of Casleius. Altogether as many as ten MSS. have been especially collated for this edition—help in this respect is acknowledged from Messrs. J. H. Dobson and A. H. Kyd—and the evidence of these is given in full in the *apparatus criticus* at the foot of each page. To give all the manuscript evidence thus in full is somewhat of a new departure in the Oxford texts, but the result is an invaluable storehouse of evidence, now for the first time accessible to scholars in convenient and handy form. Here it need only be said that previous editors had neglected two MSS. in particular—the *Codex Oxoniensis* and *Codex Agenensis*; but even in the case of such chief MSS. as M and P the discrepancies in the readings attributed to these by previous scholars (who had not distinguished between the different hands) induced Prof. Conway once more to re-examine them, and we now have the readings of different hands distinguished by M², P², etc. The result of all this work is an achievement most gratifying to scholarship, for although the text of Livy has attracted emendators perhaps more than any other text, the present editors have found scarcely ten places in these five books where traces of an obviously true reading (or of one that makes good sense) could not be found in one MS. or another. Such a result is surely ample reward for the most exacting of labours. At last we have a text of Livy by English scholars—and a text worthy of the highest traditions of scholarship.

SINGING IN SCHOOL.

Suggestions for the Teaching of Singing in Elementary Schools. (Board of Education Circular 873.)

This circular is a revision of the edition of 1905, and is intended to explain more fully than was possible in the original edition the most important principles governing instruction in the subject and to give further hints and cautions which experience has shown to be desirable. The sub-sections are:—"Choice of Songs," "Voice Training," "Ear Training," and "Sight Reading." The suggestions and criticisms are eminently useful and practical. Dancing is recommended in connection with physical exercises, and singing to cultivate sense of rhythm, but the music used to accompany the exercises and dancing is too often of a vulgar and ephemeral kind. A store of folk and traditional songs is the best protection against the attraction of vulgar and sentimental music when school-days are over. It is a mistake in the senior classes to teach children only those songs the words

of which it is supposed they will understand fully. It is the spirit of the song which appeals to the spirit of the child, not the words to the brain. Song literature should not be limited to songs children can read; some of the tunes easiest to sing and best worth knowing are the most difficult to read.

In the section on voice training stress is laid upon the importance of unison singing. While two-part singing is not altogether discouraged, rounds, catches, duets, and graded exercises for equal voices are recommended where any departure from unison singing is desired. Where two-part singing is taken, the usual practice of balancing a majority of trebles against a minority of second trebles should be reversed and the children should be divided so as to give a large preponderance, even so much as two to one, of second trebles.

In the part dealing with ear training emphasis is placed upon the educational value of a thorough training in musical rhythm. The methods adopted for training this sense should not be confined to those that are strictly musical, but one should make the whole body responsive by dancing, marching, and other physical exercises. All children should learn how to beat time according to recognised conductor's rules. It is not always necessary for the teacher to conduct. In unison singing, when once the children know the song and have begun to sing, it is often better to leave them alone; by this means the opportunity for self-expression is largely increased.

It is stated that in many schools time is wasted owing to a lack of system in the instruction. In our opinion the remedy undoubtedly consists in placing the teaching of this subject in the hands of specialists. One or two well-qualified and gifted teachers on a staff can then ensure continuity in aims and methods and a higher standard of teaching.

In an appendix to the Circular detailed suggestions are made as to the manner in which the principles enunciated therein may be embodied in a school syllabus adapted to the capacity of children of varying ages.

RECENT SCHOOL BOOKS AND APPARATUS.

Modern Languages.

French Translation and Composition. By H. J. Chaytor and E. Renault. viii+144 pp. (Heinemann.) 2s.—The compilers of this well-printed volume had a happy thought in selecting passages from well-known French and English authors dealing with the same or kindred subjects. Thus Paul Arène's account of "La première neige" is followed by Lowell's "A Winter Day," and the Coliseum is described by Zola and by Dickens. Some thirty subjects are dealt with in this way. For advanced students a careful rendering of the French passages will be found very helpful as a preparation for translating the English passages. It would perhaps have been well to supply some further help in the shape of footnotes.

Exercises in French Grammar. By E. Renault. viii+88 pp. (Arnold.) 1s. 6d.—These exercises, based on Mr. Renault's "Grammaire Française," consist of English sentences to be translated, as well as thirty prose extracts from various English authors. The sentences are arranged to illustrate various sections of the grammar, and include a considerable number of quotations. The result makes quaint reading, as the compiler is catholic in his tastes. We get such sentiments as "Very few men can afford to marry their first loves," "Frailty! Thy name is

woman," beside "New Orleans exports cotton, tobacco, coffee, sugar, corn, flour, lead, hides, etc." and "Give me some duck, peas, and rolls," and such a disturbing question as "Are a cow's ears behind her horns or before?" It is really quite an amusing book, and for revision purposes it may suit fairly advanced pupils. There are no notes of any kind.

G. Fautras, L'Odyssée d'un Artilleur. Edited by L. von Glehn. (Oxford University Press.) 1s. 6d.—Mr. von Glehn has adapted this interesting tale of the Franco-Prussian war so as to bring it within the compass of the "Oxford Junior French Series," and has done his work as editor very skilfully indeed. His reform exercises are excellent. The arrangement of the book, however, does not strike us as happy. We should prefer to hear something about the author and the war at the outset. Then notes on the subject-matter and on the pronunciation might well appear as footnotes to the text. Questions on the text of each chapter might be prefixed to the exercises on each chapter. This would obviate a great deal of wasteful turning of pages. At present, to give an example, the text on p. 5 has its questions on p. 53, exercises on p. 66, notes on p. 82, transcription of difficult words on p. 89. The biographical note is on p. 87, a note on the war on p. 81. We trust that the general editor will give sympathetic consideration to our suggestion.

Classics.

The Odyssey of Homer. Books vi. and vii., with notes and vocabulary. By G. M. Edwards. xvii+71 pp. (Cambridge University Press.) 2s.—A pleasing little addition to the "Cambridge Elementary Classics," this should form a good introduction to Homer. As the preface says, "This edition of two beautiful books . . . is intended for the lower and middle forms of schools." Beautiful books they certainly are, though perhaps the ninth with the Polyphemus episode would appeal more to the average boy's imagination. Perhaps Mr. Edwards will give us Books ix. and x. edited in a similar style. Especially worthy of mention are the little jottings at the foot of each page which give the Attic equivalents of Homeric forms. The illustrations are the genuine thing, being reproduced from photographs of actual vases, and not fantastic restorations. The notes are not overloaded, and seem just what is likely to be needed by those for whom the edition has been produced. The introduction briefly outlines the story of the whole Odyssey; but why is it written in such a half-childish, half-archaic style?

The Apology of Socrates. Edited by Adela Marion Adam. xx+109 pp. (Cambridge University Press.) 2s. 6d.—This is a welcome addition to the "Cambridge Elementary Classics"; Mrs. Adam has based it upon the edition by her husband in the "Pitt Press Series," but has rewritten most of the notes and added an entirely new introduction with the object of catering for those who have not been studying Greek very long. The introduction is lucid and interesting, and the notes, whether dealing with grammatical or historical points, are exactly what is likely to be most helpful to the elementary student. We heartily recommend the edition; it is well printed, and has a frontispiece and vocabulary.

Via Rōmāna. A Latin Course for the First Year. By Frank Granger. x+132 pp. (Bell.) 1s. 6d. net.—This is a first-year reader on the direct method, and consists of some thirty "Colloquia" among a small group of characters who journey from Chester to Rome. At the back of the book is a set of exer-

cises, one corresponding to each "colloquium," and great stress is laid upon the reading aloud with correct enunciation and quantities of the Latin words and sentences. This seems to us to be the most valuable element in the book. These exercises contain lists of all the words in the different "colloquia," which are parsed in full. "Parsing"—to quote the introduction—"is thus done for the pupil, and the acquisition of an adequate vocabulary is rendered much easier by being separated from parsing." But would it not have been rendered easier still by the total elimination of parsing as a *necessary* concomitant of Latin reading? We regret that Prof. Granger has not had the courage of his convictions and given the book a vocabulary entirely in Latin. French derivatives are given, along with occasional Latin paraphrases, but every word has its English equivalent. But in spite of these criticisms we consider that the book is worthy of sincere recommendation; it is certainly the best first-year book on direct method lines which we have yet seen. We have counted more than a hundred errors in the marking of quantities; this is a tedious task to perform, but if it is done at all it should be done with extreme care.

English.

The English Essay. By Hugh Walker. 343 pp. (Dent.) 5s. net.—Of Prof. Walker it may be said as regards English literature that the larger his books are the more welcome they are; it is only when he condenses and yields to the "primer-spirit" that we miss the afflatus. The present volume will, we hope, not be boiled down at anyone's request as the Victorian Literature was. He possesses learning, taste, and, above all, charity. His skilful pen is never dipped in that gall which often poses as criticism; witness his treatment of Gissing, Middleton, Kingsley; and even the doubtful Hearn, the pontifical Ruskin, and the malarial Pater are not screeched at. The chapter on the character-writers seems to think that they ended with Fuller; but characteristics is a phase of writing that never dies; surely they and the aphorists should be taken down to the present year. The rest of the chapters are, fairly enough, chronological. One of the most charming parts of this book is found in the quotations, so felicitously chosen; but a brief bibliography would have been a useful addition. It is by far the best book on the Essayists that is in the market, and cannot but lead the student afield. Preferences lead us to wonder why Brother Ass should be preferred by others to Dolls, and why Middleton's Story-teller should be forgotten; but everyone has preferences.

English Letters. By H. J. Anderson. 135 pp. (Longmans.) 1s. 6d.—The editor truly says that letters should be read in schools, and this book is, for the higher classes, a good introduction. But why should the younger boys and girls not have their share, for there are enough good letters to go round. Mr. Anderson begins with the famous "O Hospitem," which is scarcely English; and the letter on the memorial to Cicero's daughter is much more human. Howell is deservedly omitted; but Lady Montagu, also prepared for the press, has a place. Stevenson is well represented, but all Lamb is Manning. Pope has but half a page; and indeed the book is too short.

Canterbury Chimes. By F. Storr and H. Turner. 226 pp. (Kegan Paul.) 1s. 6d.—This is a revised and enlarged edition of Chaucerian Tales for Children. "The Prologue," "The Knight's Tale," "The Man of Lawes Tale," and six others are retold in excellent and attractive prose; only a very few writers, such as

Lamb, Hawthorne, Joseph Jacobs, can be trusted with modernising. But the present editors brought out their little book as far back as 1878, and are justified in reprinting and revising. Whether they are justified in calling "Gamelyn" Chaucer's and in putting it into the very mouth of the poet is another matter; but the child won't care. The Ellesmere cuts are given.

Desiderius Erasmus: In Praise of Folly. (Sesame Library.) 223 pp. (G. Allen.) 1s.—This book wanted doing; but we have to be content with a somewhat imperfect copy. It is cheap; it has a number of woodcuts that are "after Holbein"; and it is clearly printed. We are grateful for it; but it has no introduction, it has not been carefully read for the quotations, and information in regard to the edition from which the cuts are taken is withheld. Many of Holbein's best Encomium Moriae woodcuts are unrepresented here. Indeed, the edition is a not too satisfactory reprint of an edition not the best. Still, the book is either too expensive in the ordinary way, or is o.p., and most people know it, as they know the "School of Abuse," by name only. Now it is procurable for a shilling.

History.

A Boy of the Old Brigade. By J. Graeme. 224 pp. (Society for Promoting Christian Knowledge.) 2s.

For England! For France! By F. Harrison. 320 pp. (Society for Promoting Christian Knowledge.) 3s. 6d.

In Crazy Times. By G. Hollis. 127 pp. (Society for Promoting Christian Knowledge.) 1s.

These are three stories for children, the scenes of which are laid in war times of long ago; the first two are concerned with the wars of Napoleon, the third with the Civil Wars of Stuart times. The "boy of the old brigade" takes part in the Peninsular War and in the Waterloo campaign, but the greater part of the book is concerned with his adventures in England among smugglers and others, and the attempts of a wicked relative to deprive him of his parentage and inheritance. There are two heroes of Mr. Harrison's book, cousins, one French, one English, who take part in the Waterloo campaign, and whose adventures, told in alternate chapters, are concerned with spies. Both books are full of thrilling incidents, and will be enjoyed by young readers, especially by boys. Miss Hollis's book is of a quieter kind, and seems more appropriate to the publishers. It tells, from the point of view of a girl growing into womanhood, the story of a Church of England clergyman who is loyal to King Charles, and is evicted by the Parliament. The heroine sees the King in the course of his wanderings after Naseby, and again on the scaffold, and survives to be married and see everything end happily at the Restoration.

History of Scotland. By R. S. Rait. 256 pp. (Williams and Norgate.) 1s.—The history of Scotland as often told in text-books is apparently a weary record of personal wrangles in which no principles are involved and in which the actors strive merely for personal aggrandisement. Prof. Rait gives us a more readable and interesting account. In his first chapter he sketches the growth of the nation, dwelling slightly on the earliest history, down to the war of independence, and shows how English law was introduced by the kings as the basis of their administration. The second chapter, on "the crown," deals with the struggles of the kings for mastery over Douglasses and other great families, a struggle often interrupted by long minorities, and the

third tells of these families and of the Highland clans. Naturally, the most interesting chapter is that on the Church, in which Prof. Rait makes clear the changes at the Reformation and the various forms which ecclesiastical government took during the sixteenth and seventeenth centuries. Other chapters deal with "agriculture and commerce" and with "the Parliament," a body never important in Scottish history, and overshadowed by the General Assembly of the Church. There are a chronological table, bibliography, and an index.

The Real Atlantic Cable. By A. W. Holland. viii+176 pp. (Bell.) 1s. 6d.—Mr. Holland's first chapter introduces his subject by describing and telling the story of what we must not call the "real" cable on the floor of the Atlantic, and then explaining his subtitle, "Links between the United Kingdom and the United States." The rest of his book treats largely historically, of those links, blood, language, forms of government, trade, and literature. It is all told pleasantly, and though Mr. Holland speaks of "the straining of the links," the two wars between the countries, he insists rather on the mutual services the countries render each other than on their differences. We should think the book was written before the outbreak of the present war, but we welcome it the more heartily for its atmosphere of goodwill.

Mathematics.

A Treatise on the Analytic Geometry of Three Dimensions. By G. Salmon. Edited by R. A. P. Rogers. Fifth edition. Vol. ii. viii+334 pp. (Longmans.) 7s. 6d. net.—The publication of this volume marks the completion of the task of revising Salmon's classical treatise on solid geometry, and the editor is to be congratulated on the results of his labours. In connection with the present volume he has had the assistance of Mr. G. R. Webb, who revised and enlarged chapters xv. and xvi., dealing with cubic and quartic surfaces, of Miss H. P. Hudson, who, in the same manner, dealt with chapters xvii. and xviii. (a), on the general theory of surfaces and reciprocal surfaces, and of Mr. R. Russel, who has written the articles (455a-o), on the singular lines, points, planes, and surfaces of complexes of any order. A considerable amount of additional matter is due to Mr. Rogers himself, and the two volumes now form a comprehensive survey of the fields of tridimensional geometry, both algebraic and differential.

The Laws of Algebra. By A. G. Cracknell. vi+68 pp. (Clive.) 1s.—The aim of the writer is to provide an elementary account of the laws of algebra suitable for the senior classes of schools. There is need for some such discussion, for the ordinary textbooks probably leave upon the minds of 99 per cent. of pupils the impression that the laws of algebra are necessarily true and not merely convenient conventions. A pupil, for example, who has assimilated the ordinary empirical justifications of the law of signs and the commutation law, will find it difficult to admit that an algebra can exist in which $ab = -ba$. This book will be of some value in showing the exact logical status of the laws of ordinary algebra. There are seven chapters, dealing respectively with the fundamental laws for integers, the derived laws for integers, fractions, positive and negative numbers, applications of positive and negative numbers, irrational numbers and indices. The discussion is far from complete, but it does not profess to be so, and is probably sufficient for the object in view. We think, however, that more should be said about zero, and undefined expressions, such as $0/0$.

Subjects for Mathematical Essays. By C. Davison. x+160 pp. (Macmillan.) 3s. 6d.—The ordinary "bookwork" question, in which the student is asked to reproduce the proof of some isolated theorem, is justly regarded as not being a very satisfactory test of knowledge. In recent years, however, questions have appeared in the papers of the Cambridge colleges which can only be answered by stating and proving where necessary all the theorems relevant to the subject proposed for discussion, the answer thus taking the form of an essay. It is obvious that this type of question is a much better test of a student's intelligent and thorough understanding of the matter dealt with than the older type. In the book before us we have a collection of one hundred essays proposed in Cambridge papers, together with one hundred covering a considerable number of topics in elementary mathematics up to the calculus. The book should be of the greatest value to all scholarship candidates. It will enable them to co-ordinate their knowledge and to acquire broad views of the subjects they are studying. There is a mistake in essay 126 (1).

Science and Technology.

Drawing for Electrical Engineers. By G. W. Worrall. xii+92 pp. (Routledge.) 2s. net.—In general the knowledge of draughtsmanship necessary for the young electrical engineer is acquired in classes where machine construction and drawing are studied with other students engaged in mechanical and civil engineering. It is probably well that this is the case, since the same principles underlie the design of all machines and the system ensures one common standard of draughtsmanship. The present volume is not intended to be used by itself, but as a companion to books on machine design and to aid the electrical student to apply the knowledge of drawing he is acquiring to those machines in which he is particularly interested. The book contains many sketches from working drawings, illustrating bearings, shafts, rotors, stators, armatures, and commutators, etc. These sketches are for the most part good and clear, although some suffer from over-reduction. There is a good deal of descriptive text—almost too much—and no directions are given indicating that the student is expected actually to produce working drawings from the sketches given. But any student who has acquired some skill in drawing will certainly find his knowledge of electrical machinery considerably extended by working through the examples given in this book.

Gearing: a Practical Treatise. By A. E. Ingham. xi+181 pp. (Methuen.) 5s. net.—In this volume the author has endeavoured to give a simple treatment of the scientific principles and practice of gear cutting. Sections are included dealing with spur, bevel, worm, spiral, and helical gears, and the book contains many drawings and photographs illustrating the various types and the methods of cutting teeth. The calculations given are of the simplest character, few require any mathematics other than ordinary arithmetic, and further simplification is secured by the inclusion of many tables from which the desired result may be taken without calculation. The book will be of service to elementary students and others who are interested in gear-cutting. It contains a fair amount of up-to-date information, but cannot be regarded as a complete treatise on this important practical subject.

Miscellaneous.

The Schoolmasters' Yearbook and Educational Directory, 1915. 387+679+180 pp. (The Year Book Press.) 12s. 6d. net.—It is sufficient to say of this well-known "Who's Who" among schoolmasters that

it is as trustworthy as ever. There are in the directory some 16,000 names, and the information in the first part of the work is quite up to date. A copy of the year-book should be in every common room, and no headmaster can afford to be without his own copy.

Wild Animals of the Empire. Printed in colours from original pictures by Edgar H. Fisher. Each picture is 18x14 in., printed on a card 25x20 in. (Longmans' Wall Pictures.) Unframed, each 2s. 6d. net; in oak frame, glazed, each 7s. 6d. net; complete set of twelve subjects in portfolio, £1 15s. net; complete set of twelve subjects in envelope, £1 10s. net.—We are able heartily to endorse what the publishers themselves say of this new series of wall pictures:—"They are works of art which would form admirable decoration for the home as well as for the school, and are remarkably cheap productions for that purpose." Each one of the twelve is good; but in agreement with the juvenile audience to which we submitted the set, we consider the tiger and the African elephant most successful. Exciting lessons on natural history could be based on the pictures, and an intelligent boy studying them would be sure to propound a succession of questions which would provide the opportunity for much useful work in geography and zoology. We hope the pictures will meet with the success their excellence deserves.

EDUCATIONAL BOOKS PUBLISHED DURING FEBRUARY, 1915.

(Compiled from information provided by the Publishers.)

Modern Languages.

- "C'est la Guerre." By Marc Ceppi. 107 pp. (Bell.) 1s. net.
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CORRESPONDENCE.

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Accurate Weighing without the Use of Small Weights.

PERHAPS nothing disturbs the peace of mind of teachers of science so much as the loss of the small aluminium fractions of a gram in the weight box of a balance. Sometimes these weights have to be renewed more than once a term. The following device, which may easily be attached to the beam of any balance, will admit of weighings to the third place of decimals without the use of small weights.

The small clamps, C, to which the ends of the wires, CS, CS, are soldered, fix on to the balance beam.

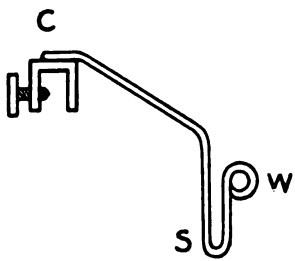


FIG. 1.

The wires should be of copper or brass bent to the shape shown in Fig. 1, and the clamps should be at least 10 cm. apart. A millimetre scale gummed to a strip of celluloid fits tightly into SS (Fig. 2). Weighing is effected by the movement of an aluminium rod, AA, which threads the loops, WW. This rod will not get lost easily, especially if the

ends of it are enlarged so as to prevent them slipping through the loops. The rod should be about the length of the balance beam, and its position on the scale can be indicated by a small piece of paper gummed to the rod.

Let the length of half the balance beam be b millimetres. Then if the aluminium rod weighs R grams, a motion of 1 mm. along the scale corresponds to the addition of R/b grams to the scale-pan opposite to the direction of motion of the rod.

Now if the maximum motion of the rod, 10 cm. say, is to read up to one gram, the weight of it must

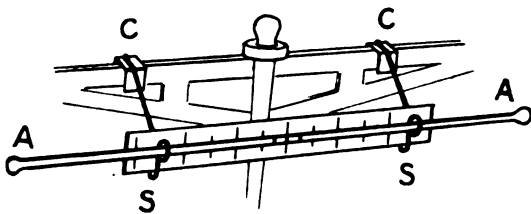


FIG. 2.

be such that a movement of 1 mm. corresponds to 0.010 gm. The third place of decimals should be estimated easily.

Putting $R/b = 0.010$ gm., we get the following weights of the rod for varying balance beams:—

Length of $\frac{1}{2}$ beam	10 cm.	...	11 cm.	...	12 cm.	) etc.
Weight of rod	1.00 gm.	...	1.10 gm.	...	1.20 gm.	

An aluminium rod 20 cm. long, weighing 1 gm. would have a diameter of approximately $1\frac{1}{2}$ mm., and would be quite rigid enough to be supported without sagging. The rod must be below the level of the knife-edge, but not too far below, or the

sensitiveness of the balance will be affected. By bending the wires one can adjust the level of the rod to give a suitable sensitiveness to the balance.

The writer has used such an arrangement as described above and finds that while the accuracy is at least as good as that obtained with the use of small weights, the operation of weighing is performed in much less time because weights have not to be put on and taken off continually. In addition there is the advantage that a rod of aluminium 20 cm. long is not so easily lost as minute pieces of aluminium foil.

GEORGE W. TODD.

Royal Grammar School, Newcastle-upon-Tyne.

A Plea for Decorative Art in the School.

AN excellent article on "Pictures in the Class Room," which appeared in *THE SCHOOL WORLD* for January, 1915, has called forth a few more thoughts on the same subject, considered from another point of view. There is no doubt that pictorial representation, from the kinema to the picture postcard, is coming more and more into prominence as a most valuable aid to teaching. A picture always presents the subject more clearly to the child than any amount of verbal explanation—a fine painting or photograph of the Alps will convey more exact knowledge than the most eloquent description. But we must guard against the danger of supposing that this is the only function of pictures in the school.

Mr. Carter appears to set aside a trifle impatiently that class of pictures "which are purely decorative, and the appeal of which depends solely on beauty of form, composition, and colour," for those which "have a distinct bearing on the work of the school." Many people would agree at once that the former class can do little in education, except to encourage artistic feeling. But then comes the often recurring difficulty: What exactly is the work of the school? If it consists in turning out the finest men and women from the material available, I fancy these purely decorative works of art may be considered equally useful with those relating to history and geography.

Of course, again, everything depends on the type of picture. A Japanese woman with a fan, or two pretty children playing with a kitten, though painted by an R.A., can scarcely be very stimulative or suggestive. These pictures will be helpful only from the point of view of the art teacher. But if we take a visualisation of a great poem, a legend of old, a religious subject, or some purely allegorical theme—even though the meaning of the latter may be a puzzle to the children—we may be sure that it will not be out of place on the school walls. Subjects of this kind will naturally require more thought in the selection than historical pictures or landscapes, since there are so many unsuitable. In all cases, the style of painting, as well as the subject, should be virile, not feeble, strong rather than dainty, austere rather than voluptuous.

If it be objected that pictures of this class will scarcely be understood, I would reply that this may in a manner add to their value, since mystery always attracts, and may lead the child to ponder on the picture again and again, thereby creating a more lasting impression. Nor should the teacher be too quick to explain fully the meaning of the painting, though always ready to help the child on his voyage of discovery. Pictures such as these not only help the literature and art classes of the school, but they powerfully stimulate the imagination—a faculty needed just as much by the man of science as the poet, and of high commercial value in the world to-day.

Even though the school pictures are scarcely noticed by the careless child, they should, if wisely chosen, have a real and definite effect on his character. Fami-

liarity may breed indifference, but still the gaudy prints that he sees in his own or another's home will appear more gaudy by contrast. In a word, pictures materially help the "atmosphere" of the school, and no educationist will deny that this is almost as important as the amount of practical knowledge dealt out to the pupils.

The ideal school would contain landscapes and historical subjects, reproductions of the best masters, but paintings which fall under the broad heading of decorative art should not be excluded by reason of their lack of utility. Let it be remembered that everything which tends to raise the character and expand the intellect, is in the fullest sense useful, though it help no single subject in the curriculum.

G. M.
Stoke-on-Trent.

Circular 849 Again.

In reading the February issue of THE SCHOOL WORLD, I was disappointed to notice the grudging acceptance which many teachers have given to Circular 849 of the Board of Education on the subject of a uniform leaving examination. Though I, as a teacher, have felt the results of my work suffer from the multiplicity of examinations, and from the futility of some of the syllabuses and questions, yet do I feel the need of some one examination the syllabus of which shall be suited to modern requirements and methods of teaching. It is from this point of view that I venture to criticise the viewpoint of Mr. E. Sharwood Smith in his paper.

Mr. Smith, by implication, if not directly, regrets the necessity for any examination at all.

In the first place, it is necessary. I can conceive of no educational system which would eliminate the examination and yet do its duty in preparing our boys for their future positions in life. The cases of the elementary and secondary schools are not parallel. The pupils of the former begin work in positions of no responsibility, and a deficiency on their part does not cause serious loss to their employers, who therefore, as a general rule, do not require a certificate from them. Very different is it with those leaving a secondary school. These boys usually take up a post under an employer who demands, and rightly so, some guarantee of their knowledge, ability, and industry.

Then, again, an examination, provided it be of the right kind, should be welcome to both teacher and taught. To the teacher, because of the necessity to measure the efficiency or otherwise of his teaching, and no teacher is entirely or invariably competent to test the result of his own work. To the taught, because of the opportunity it provides for testing, expressing, and making use of his own knowledge. My own experience seems to have been contrary to that of Mr. Smith, for though not invariably successful, I have always looked forward with a certain amount of pleasure to an examination.

Mr. Smith says that some of the best and ablest of his pupils have been unable to pass a written examination. It seems to me that there are three main causes of failure in such circumstances. These are: a mental or physical deficiency, a nervous temperament which affects the brain to its disadvantage in times of stress or excitement, and, lastly, the lack of a sufficient stimulus which will make the candidate apply his whole energy to the work in hand. The first of these two defects will continue to be so in the after-life of the candidate; the third may be only temporary, and I am inclined to think that this was the failing of those able pupils who were yet unsuccessful.

I quite agree with Mr. Smith that we have received our best teaching from those who often have had little

regard for examination syllabuses. Yet surely most of us, in our better moments, forget that such things exist, though compelled at times to bow to circumstances. If in our schools there were only one syllabus to follow, and that a properly chosen one, the enthusiastic teacher would find plenty of room for individuality and freedom in his treatment of his subject.

J. A. B.

Reims Cathedral: Memorial from British Teachers.

A MEMORIAL signed by 12,600 teachers in this country was sent last December to the French Ambassador in London to the effect that "The undersigned teachers in Great Britain and Ireland desire to express their sympathy with the teachers and people of France in the loss of their great cathedral."

After the sheets were printed, it appeared that the words "injury to" might be more appropriate than "loss of," and, on a few sheets, this change was made.

I have received the following letter from the French Ambassador:—

"Ambassade de France à Londres,

March 6, 1915.

"DEAR SIR,

"I did not fail to transmit to my Government the address of sympathy signed by 12,600 teachers in Great Britain and Ireland on the occasion of the injuries to Reims Cathedral.

"I have been instructed, and I hasten, to offer to you and to the signatories the thanks of the Minister of Public Instruction, and his appreciation of the valuable sympathy shown to France on the occasion by the teachers of the United Kingdom.

"Believe me,

"Yours sincerely,

(Signed) PAUL CAMBON.

"Charles Davison, Esq.,

"King Edward's High School,
"Birmingham."

May I take this opportunity of thanking those ladies and gentlemen who so kindly helped in obtaining the signatures?

CHARLES DAVISON.
King Edward's High School, Birmingham.

The School World.

A Monthly Magazine of Educational Work and Progress.

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The School World

A Monthly Magazine of Educational Work and Progress.

NO. 197.

MAY, 1915.

SIXPENCE.

NATIONAL EDUCATION AND WAR.

ONE of the many results of the European War has been to direct attention to the influence of the systems of education which have been built up by the belligerent nations, and especially of the British and German systems, upon national character. It is held on one hand that our educational methods and ideals have been fully justified, and, on the other, that after the war important changes may be desirable in the schemes and practice of mental, moral, and physical education.

We believe it will serve a very useful purpose to give publicity to these divergent views, so that discussion and further thought may be possible before any changes are introduced. We have, therefore, invited expressions of opinion from a number of experienced workers in education on the following points:

1. Has the course of events since the declaration of war suggested any way in which our national system of education might, with advantage, be modified so as more satisfactorily to prepare our pupils for times of national crisis?

2. Would it be a national advantage to make a measure of military training compulsory in all boys' schools?

3. With the view of contributing to the national well-being after the declaration of peace, are there any changes in current educational practice which you would encourage, designed to secure greater safety and prosperity for the Empire?

The following contributions to the symposium have been received already. We invite further expressions of opinion, and propose to publish selections from the letters received with the object of making the discussion as representative as possible.

By Prof. J. W. ADAMSON, B.A.

Professor of Education in the University of London.

It is permissible to learn even from an enemy, and from the enemy of to-day many

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things may be learned, both for imitation and avoidance. Of the second sort there is no need to speak; but there is urgent need to realise that these do not constitute the whole German character. Whatever else has become clear in the course of this war, there is no mistaking the fact that Germany is profiting greatly from the national respect for knowledge and from the national habit of discipline. The aims to which the knowledge and the discipline are directed appear to us most reprehensible; but this consideration does not in the least diminish the power of the knowledge and discipline themselves. A Briton is not the best-equipped critic of British ways, and he may therefore be mistaken in asserting that as a nation we are not conspicuous, as the German nation is, by reason of this habit of discipline and a zeal in acquiring knowledge. Yet Britons are not usually wont to resent this judgment upon themselves. We rather boast that it is the individual aspect and advantage of liberty which moves us most; we fully appreciate "Caleb's" account of "Anglo-Saxondom's idee": "thet idee's thet everyman doos jest wut he dam pleases." This artless verse scarcely breathes the spirit of discipline, nor, since laziness is a fairly common quality everywhere, does it inspire to a strenuous struggle to attain knowledge.

However the war ends and whenever it ends, the British people will thereafter have an enormous task before them to make good the loss and damage which the war must inevitably inflict upon the national well-being. That task will fall very seriously upon the boys and girls now sitting on the school benches; and it will not be accomplished by the happy-go-lucky methods, or lack of method, which have served more fortunate periods in our history. Those who undertake the task will need all the knowledge—scientific, practical, and political—which can be pressed into its service; and the knowledge must not only be widely diffused, but, still more, applied by men and women who are individually conscious of

their duty to their country and to mankind.

English education is traditionally prone to place learning last and least amongst its own purposes. The inclination is a sound instinct, but it is readily abused, and in fact very often is abused so as to signify that knowledge is after all a thing indifferent. A system of instruction which leaves the instructed with but a bare residuum of knowledge, or worse, with odds and ends of "information" incapable of being applied to the realities of life, is a flagrant anachronism in the twentieth century. More than that, an education which, however successful in other respects, yet tolerates preventable ignorance in things essential, is a danger to the country which maintains it, for it builds the true fool's paradise.

On the other hand, English education has long been alive to the educative value of all those forms of social aim and effort which can be incorporated into the life of a school. The new day will demand an intensification and an extension of this factor of education, so that boys and girls may come to realise that their citizenship is not confined to a school or city, but is that of an empire which claims their services, of a nation which can only play its particular part in the world-economy through the lives of its individual members. Let us by all means encourage amongst British children the conception of *noblesse*, but always in order to inculcate the principle, *noblesse oblige*.

One of the greatest influences in securing and maintaining national solidarity consists in common service in guarding the national safety. The man who thinks that Prussian "militarism" is a consequence of the existence of the German national army forgets that France and Belgium, Russia, and that most democratic of democracies, the Swiss Confederation, all possess national armies, while some of the sturdiest haters of militarism of all kinds are at this moment under arms in the British ranks. The conventional objection to the introduction of military training into schools commonly confuses that training with drill, which it regards as inferior to systems of physical exercise devised by medical men or gymnasts. The objection is somewhat disingenuous. A good deal of drill closely resembling military drill is necessary to those concerted movements of numbers, which are involved in the systems of bodily exercise suitable for school use; and physical exercise of a systematic kind is but a part only of military training. Most people realise the great educative value of the training of the Boy Scout and that training is not only the invention of a soldier, but is itself essentially military in its

nature, so far as it goes. It is really too late in the day to confuse military training with squad drill, or to dismiss it as "dull," "mechanical," "uneducative." Critics who so characterise it will be immediately convicted of ignorance by the myriads of men who are at this hour trying to master the varied and most interesting forms of skill and modes of intelligence which are concisely described within the narrow compass of "Infantry Training, 1914."

Of course, our whole history and our national mentality require that the discipline to which our children must submit shall be an enlightened one befitting free men. Light should be sought in more directions than one. For instance, we need (what is so seldom found) such a teaching of history that the elementary political ideas may be widely understood; if it were ever in doubt, the war has made the truth evident that a nation, possessed of knowledge and high devotion, yet still in its political non-age, is the gravest danger to its neighbours. Again, the future will probably be quicker than the present to realise that education is above all addressed to the things of the spirit; the sound feeling that what a man is is of more importance than anything else in reference to him, will be even a greater mark than ever of the best English education. The ideals of right conduct and the personal responsibility of each of us in that regard should, as a direct result of the great conflict, sink into the national conscience. To the present writer this means that religion must again become an integral part of any true education, not a detachable "subject" to be taken or left, and therefore destitute of any real educative significance. The politicians can, if they will, bring this about. If they will not, it remains that we need religion as an instrument of education; but we can spare the merely party "politics" of the politician with great national advantage. Perhaps our children will, in the light of current events, grasp that point more surely than their fathers have done.

By ARTHUR BURRELL, M.A.

Formerly Principal of Borough Road College.

IF by the term "national" in your three questions you mean "referring to the whole nation" then the following suggestions present themselves to me.

1. (a) A linking-up of theory and practice between the elementary and secondary schools.

(b) A thorough over-hauling of the preparation (training) of the teacher, the type desirable being that of the ethico-medical scholar, imbued with a love of action and a

respect for health, and inspired with a wholesome fear of the printed as against the spoken word.

2. (a) A reconsideration of present drill, with a view to greater elasticity.

(b) A large extension of opportunities in the elementary schools for all games, sports and associations involving initiative, pluck, and endurance.

(c) The direct teaching of physical courage (knowledge).

(d) A measure of pre-military training in those classes only in which the age of the child exceeds thirteen.

(e) Post-school clubs should be the rule, not the exception.

3. (a) The standardising of the numbers in classes, and the consequent intensification of work.

(b) The careful teaching of world-history and world-literature, now almost neglected, and the adoption of the daily newspaper as one of the text-books in schools.

(c) An extension of facilities for the acquisition of foreign languages and trade and technical skill.

(d) The scrapping of a great deal of present curricula.

(e) The religious (moral, social) basis of education to be re-found.

By R. F. CHOLMELEY, M.A.

Headmaster, Owen's School, Islington.

1. WITH regard to our national education—which I will not call a system, because it is not yet deserving of the name—I think that the most important inference to be drawn from all that has happened since the Declaration of War is that in whatever we do we should keep in mind what we know of our national character, and seek to promote such developments as are suited to it and not to vague general conceptions. Above all we should avoid, like the plague, any conception of education likely to produce the same mind in us as we now see in the German Empire. The power of education for good has often seemed to me to be exaggerated in the minds of enthusiasts; I confess to having underrated its power for evil; and I am more afraid now of the mischief that may be done to national character by an efficient but demoralising system than I ever have been of all the evils that may afflict an uneducated people. An uneducated people is a danger to itself: it will suffer, and it will deserve to suffer; yet it may learn from suffering: but a carefully demoralised people is, as we now see, a danger to the whole world, and it is doubtful whether it can learn anything at all.

I am not sure that I understand what is

meant by "preparing our people for times of national crisis." It sounds to me as though one should speak of preparing for an attack of cholera; and just as the right attitude towards disease is most likely to be found in those who have taken the most effective measures to keep it at a distance, so the best preparation for a national crisis is to be found in that organisation of our moral and material resources which makes a crisis most unlikely. The part that education has to play in such an organisation is of very great importance: but it is impossible that it should play that part successfully unless its importance is far more generally recognised than it has ever been in our history. Sanitation had no chance so long as epidemics were looked upon as the visitation of God; education has no chance so long as half the people believe in it solely as a means to money-making, while the other half do not believe in it at all. It is still possible to find men of position arguing in favour of releasing children from school to work on farms, not on the ground that it is a lesser evil than famine, but on the ground that education spoils them for humble service. The fault of German education is that it has deliberately produced a nation enslaved to the idea of the supremacy of the State: the fault of our education is that it has not yet been inspired by any great idea, so that it has never been possible to say that any great achievement has been due to it, and we fall back upon saying that Waterloo was won on the playing fields of Eton—which did not, in the Iron Duke's mouth, mean what most people think it did, since he actually referred not to the cricket or football field, but to a certain obscure spot known as "Six-penny," where Etonians of his day settled their differences and learnt to give and to take hard knocks.

What is needed then, above all, for that national system of education which we were trying to evolve last July, and which we hope to evolve when Peace shall have her own again, is a national ideal. We need to set before us an idea of the kind of citizen that we want to produce—for in repudiating the idea of State supremacy we do not repudiate the idea of citizenship; on the contrary, we believe that it is the one thing that matters, and that whatever education may do for a man or a woman in the way of making this or that kind of personal success easy of attainment, unless it makes good citizens of them it is not merely undeserving of praise but wholly unworthy of recognition as an element in the national life. It is hard for a rich nation to enter into this kind of kingdom—but we shall not be quite so rich after the War, and perhaps in that lies our best hope.

2. Compulsory military training in schools. I would certainly not make any form of military training compulsory for young boys, and for that reason alone I would rule it out of the elementary schools. I am not afraid of its producing or encouraging militarism—a perniciously competent teacher can do far more in that direction than any amount of drill, and a taste for soldiering as a profession is not at all the same thing as militarism: but boys of less than fourteen or fifteen years of age need a much better kind of physical training than is provided by military exercises as such, and are too far from military age for the mere practice of drill to be a valuable preparation for what they may be called upon to do later. As a lesson in citizenship I think that it belongs to a later stage: for young boys the Scout movement, if carried out in the spirit of its founder, seems to possess all the advantages and none of the defects of military training.

When we come to the case of older boys, new considerations enter. In secondary schools the idea of citizenship is or should be directly presented, and the end of school life is—or should be—the beginning of the practice of it. Consequently, if the idea of citizenship is not to exclude the idea of helping to defend one's country, an education which takes no account of National Defence is faulty. But should there be compulsion? It is a sound rule in all relations of life not to compel anyone to do that which he can be got to do of his own free will; and this holds good above all in education, where we are beginning to recognise that the training and encouraging of the free will are of infinitely greater value than the imposition of a mechanical discipline. Indeed I once heard a really eminent schoolmaster, when someone claimed for the old Volunteer Corps that they assisted discipline, declare that that was precisely the ground of his objection to them. That however, was more than twenty years ago; neither school discipline nor school Corps are quite what they were, and both are better for the change. At any rate, while I think that a secondary school without some regular form of military training, whether through an Officers Training Corps, or a Cadet Corps, or some other system, is an imperfect school, I do not believe that compulsion is either necessary or desirable. I admit that there is something to be said for the view that if such training is good for us, it is good for all of us, and ought to be just part of the curriculum, like arithmetic. I confess that I have in the past held that view myself, and I do not know that my reasons for abandoning it are the right reasons: but such as they are, I think that

they are principally these two. To begin with, the value of military training in schools seems to me to be chiefly moral, and I don't like compulsory morals; and in the second place, I hold that all education ought to be as amusing as possible, and I think that the Voluntary Cadet Corps or O.T.C. can be and generally is, made so amusing—perhaps I should have said “interesting,” as a more dignified expression—that it is very difficult for any ordinary human boy to resist its attraction. If the financial difficulties, by which most schools are hampered, could be smoothed away, I do not believe that there are half a dozen secondary schools in the kingdom to which the sternest enthusiast would want to apply compulsion.

3. After the Declaration of Peace, let us set about organising our Secondary Education.

P.S.—One more word about organisation. Good organisation is not inconsistent with a large measure of liberty. The two most important steps in the direction of educational organisation that have been taken in the last few years are the institution of the new Teachers' Registration Council, and the issue by the Board of Education of Circular 849, on examinations in secondary schools. Both illustrate the above observation. We need two things, first, as definite a system as is compatible with the greatest possible measure of freedom, and secondly, a body of teachers who will take every conceivable liberty with the system. We can have both, if we care to.

By ARTHUR C. COFFIN, B.A.
Director of Education, Bradford.

1. THE course of events since the Declaration of War may be regarded as affording a means of judging the efficiency of our systems of education.

(a) From 1870 to 1902.

(b) From 1902 to 1914, and our judgments will therefore relate to people of the age of

(a) 30 to 50 years.

(b) 17 to 30 years.

It does not appear that in spirit or efficiency either of these groups has shown itself inferior to the similar groups in any other country. Our people, whether of military age or above, have shown themselves educable, both in military and economic matters, and if the two systems dated above have secured this result, they have secured the main thing. If a system of education could be devised to render our people more rapidly adaptable, there is perhaps the risk that it might render them more liable to panic.

2. No. Military training, as the term was accepted before the War, seems to have

proved unnecessary. The progress made by the recruits since August 1914, may be suggested as sufficient proof of this.

3. No. The safety and prosperity of the Empire depends mainly upon spiritual factors. The trend of educational method in England during the last few years seems to have been all to the good, and there does not seem to be any necessity for any violent wrench of our practice in any direction other than that determined by the ordinary development of public educational opinion.

By FREDERICK J. GOULD.

Author of "Children's Book of Moral Lessons,"
Lecturer and Demonstrator for the Moral Education
League.

INDIVIDUAL character ought not to be trained to meet crises. It should be trained to meet, manfully and in a serious yet cheerful spirit, the duties and trials of daily life. The same principle applies to the training of the nation's youth as a whole. It would be a great error, both from a political and a spiritual point of view, to be constantly adjuring young people to prepare for the next war. Chevalier Bayard's motto should suffice *Do thy duty come what may*.

Whatever policy the nation may adopt with regard to a Citizen Army, or the like, I do not think the military element need be imported into the school. But I am convinced that a far more efficient physical training, including the provision of food and clothing for all children whose parents cannot adequately maintain them, is needed for large masses of girls and boys.

Thousands of obsolete school buildings ought to be pulled down, and new structures erected with manual-training rooms, spacious playgrounds, and gardens. The leaving age should be raised to 15.

These measures would result in an immense economy of the national vitality.

The whole of the schools of the British Empire should approximate towards unity. This unity would imply (1) The deletion of much useless drugery, *e.g.*, in arithmetic; (2) the abolition of the sectarian distinctions between various types of schools receiving public money; (3) a more vivid, human and rational method of teaching history and citizenship; (4) the general adoption of systematic moral instruction, based on the facts of history and life, the good things in literature, and the civic needs both local and imperial: such instruction, with suitable variations, to be common to all the schools of the Empire, including India.

Along with this approximation to unity of

aim, there should be a larger liberty for all teachers who show tokens of originality and initiative. Spontaneity and imagination should have free scope in school methods and administration.

By Prof. F. J. C. HEARNshaw, M.A., LL.D.

Professor of History, University of London, King's College.

In reply to your inquiry, I beg to say (1) that the great demand since August last for historical lectures and instruction courses suggests the urgent need for including in our school curricula more commonly than has been the custom in the past the teaching of recent history both British and European, together with the story of the development and structure of the British Empire; (2) that the defence of Britain and the Empire in the future will undoubtedly demand the adoption of a system of universal military training (as distinct from conscription), such as is already established in several of our great self-governing Colonies, and that the most suitable time for laying the foundation of this is the closing period of school life; (3) that the marvellous manner in which Britain has in a few months adapted herself to war conditions, diverted her industries to the supply of munitions, and trained her young civilians to arms indicates that there is much virtue in that system of education which rejects excessive organisation of the Germanic type, repudiates complete governmental control, and leaves ample room for individual idiosyncrasies and personal initiative.

By D. MACGILLIVRAY, M.A.

Headmaster, Hillhead High School, Glasgow.

PAST history gives ample support to the view that the influence of the Great War upon Education will be enormous. To go no further back than the Crimean War; it will be found that there was a marked educational revival at its close and the movement thus begun had its outcome in the great Education Act of 1870. The Act of 1902 again may be said to have had its origin in the experiences of the Boer War, and certainly it was from that it received the driving power necessary to carry it through.

The increasing importance attached to physical training and to the medical inspection and care of school children may also be regarded as the direct fruits of the revelations of the recruiting sergeants during the same period. We have therefore good grounds for believing there will be far reaching changes in our educational system in the near future, but what these will be, must depend largely on how we emerge from the

struggle. But whatever the issue there are bound to be new ideals and new standards of value in education as in every other department of national life, and these imply change and reconstruction.

It would be wise, perhaps, to conclude with these general statements but to condescend on particulars is interesting and attractive. It seems fairly certain that the movement already initiated for laying greater stress on the physical side of education will gather strength and momentum with the years. Intellectualism, pure and simple, will be displaced from its high seat, and character building will be restored to the place it should occupy in every educational system. The Germanising of our schools which has been carried much further in Scotland than in England, will, for a time at least, cease and a certain measure of freedom and elasticity will once again be restored to our curriculum.

By Prof. J. S. MACKENZIE, Litt.D., LL.D.
President of the Moral Education League.

It seems to me a little too early to attempt to draw any definite lessons from the war. Moreover, my knowledge of schools is scarcely sufficient to justify me in pronouncing any very decided opinion about their work. I may however, offer a few general remarks on the subjects you suggest. What naturally impresses one chiefly in comparing German and English methods is the contrast between the great thoroughness of the former in respect of organisation and drill, and the relative laxity of the other. Both methods appear to have their disadvantages. There is some ground for thinking that the German method tends to produce a certain hardness and mechanical rigidity; but it is extremely efficient within its limits. The English method is perhaps better adapted to develop spontaneity and adaptability; and there is some reason to fear that, in some recent attempts to imitate German methods, these advantages have been to a certain extent lost. In general, I think it ought to be recognised that the development of character and intelligence is a more important end to aim at in education than the acquisition of knowledge, though of course the two ends are not in any way opposed to one another, but are naturally realised together. One of the chief advantages of fixing attention primarily on character and intelligence is that it enables us to see more clearly what kinds of knowledge are specially valuable at different stages in the education of the young.

With regard to the question of military training, I think it has been fortunate for our

country that it has not so far felt the necessity for adopting any system of compulsory military service such as that which has been forced upon most of the European peoples. At the same time, it must be admitted that our comparative lack of preparation for national defence is serious and might prove fatal. The cultivation of the spirit of citizenship is certainly of great importance, for times of peace as well as for times of war. I may refer, in this connection, to the work of the Moral Education League, which aims at promoting "the systematic cultivation of Character, Conduct and Citizenship." In an age that is so strongly characterised by industrial competition, the sense of national and international solidarity is in danger of becoming obscured; and this danger is perhaps specially prominent in our own country. What is primarily wanted, however, is not training for war, but the cultivation of the spirit of loyalty to what is best in national and international life, and of readiness for social service both in war and in peace. The methods adopted in the Boy Scout Movement could probably with advantage be developed and more widely applied. Similar methods are of course, with certain modifications, suitable for girls as well as for boys.

A time of war certainly directs attention to the importance of being prepared to deal with the special problems of the hour as they arise. It is perhaps still true that too much of our education is rather remote from the practical problems of modern life. It would be foolish to undervalue what is still to be learned from the study of ancient civilisations, Greek, Roman, Jewish, and others; but it has certainly been true in the past, and is probably still true in the present, that a disproportionate amount of time has been devoted to the acquisition of verbal knowledge bearing upon these civilisations, and too little to the attempt to understand what light the ancients have to throw upon our own lives, and to the more direct attempt to know ourselves and our near neighbours. If the various nations concerned had understood one another better, it is fairly certain that this disastrous war would never have taken place.

These remarks are somewhat general; but no doubt there are many others who will be able to supply suggestions of a more detailed kind.

By F. B. MALIM, M.A.
Master of Haileybury College.

I HAD the honour of moving a Resolution at the Annual General Meeting of the Incorporated Association of Headmasters to the

effect that "in the opinion of this Association instruction in the elements of military drill and the use of the rifle should form part of the education of all boys in Secondary Schools." The motion was carried in a large meeting with thirteen dissentients.

I then endeavoured to show that such training is not a substitute for the military training of young men, but is desirable for two principal reasons. First, it provides a reservoir of men who have at least learnt the A.B.C. of the soldier's art, and will be readier to learn further lessons. Secondly, if a boy is taught that he is being drilled not simply because he will expand his chest or because he likes playing at soldiers, but because he may have to defend his country when he grows up, he will realise that to take his share in national defence is the duty of every citizen, and that no amount of valour is of much use unless it is trained. To be a true citizen is to realise that Duty comes before Privilege; and to shirk the duty of bearing arms is to shirk the first duty.

By J. T. PHILLIPSON, M.A.

Headmaster, Christ's College, Finchley, N.

THE terms of your reference suggest the likelihood of a recurrence of war on the grand scale. No one can deny the possibility of such a catastrophe. When peace is signed, we shall find ourselves confronted by one of three conditions; either we shall be under the domination of a foreign power, or we shall have crushed the menace of military ascendancy, or we shall be up against a *status quo ante bellum*. The first may be dismissed, not only because we do not believe it possible, but also because in such an eventuality *cadit quaestio*. In the second case, we may assume that for very many years to come, little more will be necessary than the military and naval policing of our dominions and their connecting roads. Yet even so, even in the most favourable issue, there are forces in the making—outside the present boundaries of modern civilisation, and perhaps inside it also—which, if antagonistic to the forces of enlightenment, will tax them to the utmost of their powers.

In the second of the three results indicated, and *a fortiori* in the third, it appears to me, then, that there is no prospect of a diminution of our armed forces. In the third case, it is obvious that we must make ourselves ready for a further and a more dreadful life and death struggle at a comparatively early date.

I am a convinced believer, on general grounds, of the advantages of voluntary over

compulsory service. If proof be called for, we need seek no better argument than the response to Lord Kitchener's appeal for men. But there are weighty arguments on the other side. If his army had been ready last August, would not the issue have been decided by now; would the war ever have taken place? In normal times the recruiting for the Territorial Force was deplorably inadequate, and that not because the spirit of the nation was dead, but because Brown did not see why he should join while Jones didn't. Men are ready to die for their country, but not so ready to live for it: in peace time *Ego* predominates. And it is "right there" that the educationist comes in, or should come in.

And thus I am constrained to believe that all schoolboys should be trained, compulsorily, in the elements of military drill. And I would follow this up after school age with a minimum of compulsory military training on the lines of the Australian system. Incidentally, this would go some way towards meeting a difficulty which appears to me to be on the increase, and which I believe we shall find in an intensified form when all these thousands of splendid youngsters return,—a growing disinclination for office work. Who shall blame them? Give them a few days' training in the open air as a part of their duty, and not taken from their leisure, and they will be better men in every sense.

To my mind, the cry "Back to the land" has received an impetus during the last few months. We ought to be, and we might be, far more nearly self-supporting than we are. Education may well be directed towards this end. Knowledge of agriculture, interest in the land, are not, perhaps, suitable subjects of instruction for every type of school; but they should certainly receive a largely increased attention. In the same way we have been awakened as we have never been before to the necessity of looking on trade in all its branches as a science, and adequate measures to meet this need should be taken in hand forthwith both by the Legislature and by the Education authorities.

But the most pressing reform is that as a nation we should take education more seriously. The really industrious boy, the parent and the employer who value education truly, are the exception. The latter, as a class, have yet to learn that a sound general education up to matriculation standard at least is essential, and that this should be followed by a further period of vocational training: the boy has not yet realised that the present makes the future. Give the boy something tangible to work for, a school-leaving certificate, with the certainty that its possession will entail ad-

vantages, its non-possession disabilities; make this the rule of the land, and we shall soon begin to reap the benefit.

By Dr. W. H. D. ROUSE, M.A.

Headmaster, Perse School, Cambridge.

1. THE war has clearly shown a fault in German education which has long been clear to impartial observers, that it is too mechanical: it makes parts of a machine, but it does not make men. Therefore I hope we shall cease slavishly to imitate it, and in particular, I hope that the Board of Education will drop its proposed leaving examination. This is distinctly made in Germany and if carried out, it will reduce our secondary schools to a dead level of mediocrity.

2. Military training ought certainly to be compulsory in all schools. The effects in Australia and New Zealand have been admirable, and what we had of it has provided most of the officers of the new Army. Those who have been in the O.T.C. all testify to the value of the training, which has saved much time by making the mechanical part of drill familiar. If it had been applied to elementary schools, our difficulties would have been much less than they are.

3. We need less book-work, more body-work; every boy ought to know how to ride and swim, to use carpenter's tools, the elements of farm work and the care of animals. We need the help of the Government to counteract the prejudices of parents, and their tendency to softness and indulgence. In the elementary schools particularly we need the duties of the citizen to be brought home to all.

By ARTHUR ROWNTREE, B.A.

Headmaster, Bootham School, York.

1. and 3. INCREASED attention should be given to physical training and medical inspection.

There should be a minimum leaving-age of 15, and systematic "after-care" with continuation schools (including physical training) up to 18.

More handwork is required.

In secondary schools more time should be devoted to modern languages, European history and civics. (Two modern languages ought to be options for Latin and Greek for entering Oxford and Cambridge).

For developing individuality and increasing initiative, far more should be made of "leisure-hour" pursuits (natural history, archæology, carpentry, essay and debating societies, etc.,) and of scouting.

It must be remembered, whether we are

thinking of the Empire, or of national crises, that we are educating for life, and are, above all things training personality.

2. Certainly not.

(i) I agree with Mr. J. L. Paton's protest made three months ago against "the tacit acceptance of war as a commonplace of life, as an inevitable thing. This is bad enough at any time of life, but for those who deal with boys it is nothing short of criminal. . . . Adolescence is the great chance of instilling a spirit of brotherhood and the sweet reasonableness of peace and helpful service."

(ii) If something more is to be made compulsory in the education system, it must be something that will make for educational efficiency and not something with an ulterior motive.

By W. B. STEER.

President of the National Union of Teachers.

I GATHER from your letter that you desire personal opinions and so I do not wish that my views should be regarded in any way as the collective opinion of the 92,000 teachers who are enrolled in Union membership.

Speaking generally on the question of the educational system of Germany and England, I have always urged that, in aim and tone, the English schools are far superior to those of Germany, but that we have never succeeded in arousing the enthusiasm for education which has long been evident in Germany and in other Continental countries. As a member of the International Bureau of Teachers which has included the representatives of nearly all European countries, I am convinced that English teachers have nobler aims than those of other lands; but the English teacher has had to pursue those aims in face of national indifference, unsympathetic criticism, and, in many localities, public scorn.

So far as my observation goes, the English teacher has cultivated individuality and initiative in his pupils, whereas the German teacher has been required to cultivate implicit obedience. Both initiative and obedience are, of course, good; but the English teacher has emphasised the former while the German teacher has emphasised the latter. The difference comes out in a marked way in games. An English boy plays football, while a German boy goes in for set gymnastic exercises. An English boy climbs trees, while a German boy climbs a regulation pole. Both endure hardness, the English boy by choice and the German boy by compulsion. I've heard of English boys playing truant, threatening to throw an ink-pot at an unjust teacher's head, and even doing it; one never

hears such things in Germany. It is in no spirit of cynicism that I say that such things show the vast superiority of English education.

And the results! An English army which is fair in the fight, sportsmanlike to its prisoners, respectful to old age, chivalrous to women, tender to children; a German army which isn't.

Is then our English educational system perfect? By no means. Of late years it has been Germanised in several respects. Take "Organised Games" for instance. This is purely German made. The English boy does not want his games organised for him. Indeed, he resents it. He does not mind his teacher "refereeing" for him, but he wants the boy-captain of his team to be supreme on the field. He puts up with "School Journeys," because they are on the time-table, but infinitely prefers a tramp on his own with companions of his choice.

Further, we have gone too far in introducing the play-element into our schools. "Varied occupations" were right enough when they afforded a break in the serious work of the school, but the serious work has been curtailed too much. In the training of character it was good that a boy should feel that he had to stick to his task even though it were uncongenial. The difficult sums of old time were not altogether bad; they gave training in perseverance and accuracy; they cultivated the spirit of painstaking.

"Vocational training" is now one of the gods we are asked to worship. This, too, was made in Germany, and it bears the mark of its origin. The English teacher believes that it is his duty to train for leisure as well as for work. The advocates of vocational training desire that the boy shall be trained for work. They ask for manual dexterity, and for this they are prepared to sacrifice intelligence and character. When we talk of compulsory education up to the fourteenth birthday, we mean, or we ought to mean, the development of character. The advocates of vocational training seek to encroach upon the school life of the child in its real sense.

Do we require military training in our schools? Yes, if we want to Prussianise our land. But if we want to develop our national greatness along the lines which have made us great, then, a thousand times, no. The war we are now pursuing is a war to destroy Prussian militarism. If the only outcome of the struggle is the adoption of that system, then we are wasting our manhood in vain. To adopt military training in our schools is to obey the behests of the Kaiser, to bow the knee to Baal.

When the war is over, and the nation is once more free to consider reforms in her educational system, I hope that something will be done to lessen the size of classes in our primary schools, to attract the best men and women which the country can provide into her educational service, to reduce the number of purely ornate subjects down to the limit of reasonable recreation, and so to give fuller time for the teaching of such subjects as are necessary to enable the boys and girls to become useful citizens, to take an intelligent view of modern life, and to understand the problems involved in the government of the homeland and the Empire.

CATERING FOR DINNERS IN DAY SCHOOLS.

By W. A. NEWSOME, B.A.

Acting Headmaster, Stationers' Company's School, Hornsey, N.

THE schoolmaster in his time plays many parts, that of teacher, according to some authorities, being the most important. Not infrequently he has to set aside his more clerical and apostolic labours, and serve tables.

Some eighteen months ago we of the Stationers' School had to face the problem of the school dinner, one of the minor problems of day-school life, it is true, but one that, in these days of soaring prices, is as difficult of solution as any other. This is a short account of an amateur attempt to solve the problem and carry on with financial success under the present stress of war conditions.

Like many a day-school in London and the neighbourhood, we have no *exeat* system; when morning school is over the boys are free to come and go until the afternoon bell rings. Many come in from a distance, and the railway time-table rarely gives them an opportunity of getting home for a midday meal. The sandwich-tin is too much in evidence and the brown-paper parcel not unknown. The local cook-shops are not satisfactory, and really good restaurants are few in number, a long way off, and decidedly expensive. Lunch in the past has tended to degenerate into a penn'orth of pastry and three penn'orth of bullseyes, with disastrous effects upon the afternoon's work. Very few members of the staff are able to get home to a midday meal, and those who have tried have sometimes returned, at the end of the ninety minutes' break, jaded with unwonted exercise and not too amiably inclined to face the difficulties of an afternoon's teaching. Many of the boys who live near the school have only a scratch meal in the middle of the day, for father gener-

ally lunches in the city, and the household sits down to its principal meal between 8 and 9 o'clock in the evening.

With these facts common knowledge, the masters were consulted, and it was decided that the dinners should go on under their control. The actual management was handed over to the present writer.

It was stipulated that he should have a free hand as caterer and be hampered with red tape as little as possible. His colleagues agreed to view his efforts as leniently as possible if he made things pay, and promised to give what help they could. So one man takes the money and keeps the accounts, three carve and apportion the dishes, and all lend a hand in serving and regulating the meals. We may say at once that the dinners are a financial success, thanks to this amicable co-operation of the staff and the naturally keen interest they take in an institution run by themselves and under their sole control.

Now for the *modus operandi*. Morning school ends at 12.30. It is a rule of the school that those boys who do not go home to dinner take the midday meal together in the dining hall. Accommodation, including water, is provided for those who bring their own provisions, and all have to assemble for a soap-and-water parade and satisfy the master on duty for the day that they have had a good wash before they enter the dining hall. They file in and take their places before 12.45; there is no arrangement by form, friends sit together, and the right of a regular diner to his place at a table is jealously preserved. Grace is said at a quarter to one, and the bill of fare for the day read, although there is a menu card on each table. As there is always a choice of dishes, there is a regular rota for the privilege of first service. The "first table" for the day is first served, and has the right of first choice. Potatoes, a second vegetable, and bread are placed on the tables, and to these the boys help themselves. Further vegetables, sauces, gravy, salads, Yorkshire pudding, suet pudding, and other accompaniments of the meat dishes are served by the masters from the carvers' table. The sweets are always apportioned in the kitchen while the first course is being taken; they are then carried round on trays by the kitchen staff for the boys to make their own selection. When all the boys are served with the first course the masters sit down to their meal at the high table. There is no distinction between boys and masters in the matter of dishes; the menu is the same for all.

The fundamental problem in connection with the catering may be stated thus: how can we compete with the restaurant and eating-

house in quality, quantity, variety, and price? Can we supply a better and more varied meal at a cheaper rate than the profit-making restaurateur can? If we can supply as good a meal, the attractions of dining with his chums, in his own dining-room, and of getting more time for rifle-shooting, football, and the other serious distractions of a schoolboy's life will always tend to make him support the school dinner.

Our first and, we believe, our most telling efforts were devoted to securing sufficient variety in the menu. High thinking may be associated with plain living, and a boy *may* do a good afternoon's work on a diet of boiled mutton and baked rice pudding, but we doubt it. It is possible also, to indulge in another Tupperism, that hunger is the best sauce; the flavour of that bread and cheese taken with an accompaniment in the bar of the country inn at the end of a ten-mile walk is, we admit, a joy to be remembered. But the schoolboy and his master, at the end of three and a half hours' exhausting work, want a lighter and more appetising meal; hunger is a good sauce, and most boys provide it, but there are other sauces, quite easily prepared, that make the dinner attractive, and cause that display of cleared plates so cheering to the caterer's eye when he journeys round the tables at the end of the meal.

The following are the bills of fare for the weeks ending September 24th and November 20th last: they are no better and no worse than those of any other week and simply indicate the directions in which we strive to give variety. They may be taken as fairly indicative of the autumn and the winter menu since the war broke out.

Monday, September 21st.

Roast beef, Yorkshire pudding, and braised carrots.
Roast leg of mutton and French beans.
Roast loin of mutton, onion sauce, and vegetable marrow.
Irish stew.

Mashed potatoes.
Boiled potatoes.
French beans.
Marrow.
Cauliflower.

Boiled fig pudding.
Boiled jam pudding.
Plum and apple pie.
Jam puffs, marmalade puffs.
Baked apple dumplings.
Stewed pears and custard.
Jellies. Baked apples

Monday, November 16th.

Roast beef, Yorkshire pudding, and braised carrots.
Roast leg of mutton and onion sauce.
Grilled chops, snow potatoes, and tomatoes.
Irish stew.

Mashed potatoes.
Baked potatoes.
Braised carrots.
Haricot beans.
Cabbage.

Boiled currant pudding.
Boiled apple pudding.
Suet pudding with jam or syrup.
Baked apple dumplings.
Apple pie.
Jam puffs.

Tuesday, September 22nd.
Cold lamb, tomatoes and cucumber salad.
Stewed steak and macaroni.
Savoury stuffed marrows.
Boiled leg of mutton and caper sauce.

Baked potatoes.
Fried potatoes.
Mashed potatoes.
Cauliflower.
French beans.

Apple and blackberry pudding.
Damson and apple pie.
Golden pudding with jam or syrup.
Apple mince tart.
Jam puffs.
Baked apples.

Wednesday, September 23rd.

Cold boiled beef, beet-root, and celery salad.
Stewed rabbit and pork.
Grilled chops and chip potatoes.
Haricot chops and French beans.

Mashed potatoes.
Baked potatoes.
Fried potatoes.
French beans.
Cabbage.

Sultana pudding.
Greengage pudding.
Suet pudding with jam or syrup.
Baked apple dumplings.
Jam tart.
Jellies.

Thursday, September 24th.

Roast pork, stuffing, and apple sauce.
Roast leg of mutton.
Fried hake, chip potatoes, anchovy sauce.
Minced curry and rice.
Cold lamb and salad.

Baked potatoes.
Fried potatoes.
Mashed potatoes.
Cauliflower.
Cabbage.

Boiled currant pudding.
Apple mince roly-poly.
Syrup tart.
Jam puffs.
Sponge trifle.
Stewed plums and custard.
Baked apples.

Tuesday, November 17th.
Boiled beef, parsnips, and peas pudding.
Haricot shoulder of mutton and peas.
Roast leg of mutton and caper sauce.
Grilled chops, peas, and snow potatoes.
Savoury stuffed onions.

Mashed potatoes.
Cabbage.
Brussels sprouts.
Parsnips.

Raisin pudding.
Apple pudding.
Suet pudding with jam or syrup.
Jam tart.
Jam puffs.
Baked apples.

Wednesday, November 18th.

Roast leg of mutton, stewed celery, and white sauce.
Roast pork, stuffing, and apple sauce.
Haricot leg of mutton.
Steak puddings.
Grilled chops, snow potatoes, and tomatoes.

Mashed potatoes.
Haricot beans.
Stewed celery.
Brussels sprouts.
Cabbage.

Golden pudding with jam or syrup.
Suet pudding with jam or syrup.
Apple pie.
Fig pudding.
Marmalade puffs.
Jam tart. Jellies.

Thursday, November 19th.

Roast beef and Yorkshire pudding.
Roast leg of mutton.
Roast shoulder of mutton and leeks.
Stewed rabbits and dumplings.
Braised chops and peas.
Meat pasty.

Mashed potatoes.
Leeks.
Cauliflower.
Brussels sprouts.

Lemon pudding with jam or syrup.
Suet pudding with jam or syrup.
Currant pudding.
Jam tart.
Sponge trifle.

Friday, September 24th.
Roast beef and Yorkshire pudding.
Steak pie.
Cold hindquarter of lamb with tomato salad.

Mashed potatoes.
Brussels sprouts.
Cabbage.

Ginger pudding.
Apple and blackberry pudding.
Damson and apple pie.
Baked apple dumplings.
Mince apple tart.
Jam tart.

Friday, November 20th.
Roast beef and Yorkshire pudding.
Roast shoulder of mutton.
Haricot shoulder of mutton and peas.
Grilled chops, snow potatoes, and tomatoes.
Curry and rice.
Mashed potatoes.
Baked potatoes.
Cauliflowers.
Brussels sprouts.
Chocolate pudding.
Sultana pudding.
Suet pudding, with jam or syrup.
Baked apple dumplings.
Baked apples.
Jam tart.

We are not dietetic experts; we are perfectly willing to stand and be shot at by all those who have views on the subject of feeding the British schoolboy. We simply claim that in the matter of variety we can compete successfully with the average outside eating-house. The meals, thanks to an excellent kitchen staff, are admirably cooked and tastefully served. The dishes look well when they come to table, a matter of some importance. "First catch your cook" is the golden maxim for anyone who attempts to run a school dinner. The most unsatisfactory cook we ever had was a *diplomée* of some cookery school; one of the best had certificates and medals galore. We believe our present cook has never attended a cookery class in her life, but she has a natural aptitude for the work, is a born manager, and has had a large experience. We hope this acknowledgment of her value and her success will not be used as an argument against training. Cooks, like teachers, *are* born, but sometimes they are made.

Boys do not like boiled meat, salt beef excepted. Turnips they strongly object to, boiled fish is an abomination, and the milk pudding is anathema. An occasional milk pudding or a boiled leg of mutton pleases the staff, and the latter dish sometimes finds its way on to the menu; it is always left severely alone by the boys. On the other hand, apple dumplings, baked apples, and suet pudding with jam or syrup are great favourites; stewed fruits are apparently not satisfying enough, or perhaps they are found too frequently on the domestic board. We encourage the eating of vegetables; a boy generally has three kinds on his plate. The vegetables most in disfavour after the turnip are stewed celery and boiled leeks, but curiously enough onions run a great race with green peas for the first place in a boy's estimation. The most popular joint

is undoubtedly roast pork, with all its attendant evils, including crackling and plenty of gravy; lucky is the table that is first on pork day!

Now for finance. Our dinners are absolutely self-supporting. Table appointments, wages, insurance, laundry, upkeep are all paid for out of the money taken. Rent is the one item, a serious item to the restaurateur, that we are spared; the tables and chairs (we do not use forms) are the property of the school. The boys pay 3s. 6d. for five meals, a little more than 8d. each; the five need not be consecutive. The masters pay less than this; visitors are often invited to be our guests; the duty master and the prefect for the day have their meals free. Taking a group of 2400 meals provided in the early part of last term, since the general rise in prices, I find that the actual cash taken is £73 10s. This works out at 7'35d. per meal. The expenditure per meal is as follows:—

			d.		Per cent.
Butcher	...	...	3'65	approx.	50
Grocer	...	...	0'71	"	10
Greengrocer	...	...	0'60	"	8
Baker	...	...	0'40	"	5½
Milk and eggs	...	...	0'18	"	2½
Fishmonger	...	...	0'18	"	2½
Wages and kitchen	...	...	1'28	"	17½
Laundry, insurance, upkeep	...	...	0'21	"	3

This leaves the narrow margin of 0'12d. per meal for incidental expenses and unexpected trouble. The serious item is the butcher's bill, which includes suet as well as meat. In spite of an arrangement with a local butcher, by which we secure meat of really excellent quality at most advantageous prices, and in spite of careful carving and judicious distribution, this item shows a continuous disposition to increase. The real crux of the catering is to keep the meat bill low, and the caterer's daily efforts are directed towards regulating the weight of the meat ordered so that there shall be enough and just a little to spare. We are charging the same dinner fees now as before the war and striving hard to carry on on the old lines, but it is obvious that any further serious rise in prices will necessitate some readjustment of charges or of methods.

There has already been some readjustment of methods. Meat, bread, and potatoes have increased in price more than vegetables, fruit, and groceries generally, and this fact has directed some of our efforts at economy. We give smaller portions of meat, or rather portions of less weight. The carver's good will and a sharp knife will cut meat thin enough to satisfy the caterer and of area sufficient to satisfy the boy. Nowadays, knife-sharpening is cheaper than beef. The nature of the connection which certainly exists between a satisfied eye and a satisfied stomach I leave to the

psychologists; this at least is certain, five small portions on one plate (e.g., meat, pudding, and three vegetables) are much more satisfying to the eye and to the appetite than two, or even three, large helpings (e.g., meat, potatoes, and cabbage). Moreover, potatoes have increased in price from 3s. 6d. a cwt. to 7s., or even 7s. 6d., for the best quality, while swedes, turnips, carrots, parsnips, onions, celery, rice, haricot beans, butter beans, peas, and cabbage are all near their normal figure. We give smaller helpings of potato and make up by more, and larger, portions of other vegetables. This is good for the caterer and good for the rising generation; the Englishman is given to eat too many potatoes; the possibility of eating hot meat without this vegetable has scarcely yet occurred to the national mind, but the present seems a favourable time for spreading the idea. Incidentally, we may remark that baked potatoes are more economical than boiled; the boy who wants three boiled potatoes is generally contented with one or one and a half when baked.

Of the necessity for petty economies in these hard times there should be no need to speak. Mustard is best made fresh and in small quantities each day. Bread one or two days old should be used, and any left over utilised in the kitchen. The stock-pot, properly looked after, is a most valuable institution; indeed, the state of her stock-pot is a good indication of a cook's housekeeping qualities. Soup is not very acceptable to the average boy, but gravy is, and gravy often covers a multitude of deficiencies, and perhaps even an occasional sin. Medium-sized joints pay best, say joints of six or seven pounds; if larger or smaller, fat or bone are generally disproportionate. Moreover, a medium-sized joint cooks better. Both underdone and overdone meats are extravagant, and both are sad traps for the inefficient carver.

Hand-to-mouth catering is our order of the day. Like many other day-schools, we are in the neighbourhood of cheap retail markets with a large turnover. Quick and large returns allow of small profits, and in this advantage we purchasers share. Our fruit, vegetables, and meat are of astonishingly good quality, fresh and cheap; our groceries we buy at the ordinary retail prices. Our material is ordered from day to day, so that we can take advantage of anything good that is in the market. We preserve our freedom to deal with the most advantageous seller by either paying cash or settling all bills at the end of the week; so, as "good customers," we are always well served. I am no believer in the store-cupboard for such a school as ours. The small, generally very small, pecuniary advantage obtained

by purchasing in bulk at so-called wholesale prices is more than set off, in our experience, by the loss incurred by the free-handed use of material drawn from apparent superfluity. Moreover, stores deteriorate, and our balance-sheet cannot stand losses from deterioration; in the days of our greater inexperience we once bought a large quantity of apples cheap at 3s. 6d. a bushel. Some of those apples did find their way to the table, but as for the others, there! We need say no more, we now buy a modest four or five pounds daily.

A final word as to quantities. The names of all staying to dinner are known the first thing in the morning, and the number is communicated to the kitchen staff. The writer then visits the kitchen and satisfies himself as to the adequacy of the quantities provided for the day; he estimates the amount of meat required by allowing 4 oz. of uncooked beef or $4\frac{1}{2}$ oz. of uncooked mutton per head. This amount covers losses due to cooking, to bone and to general preparation for the table. A shillingsworth of potatoes, now

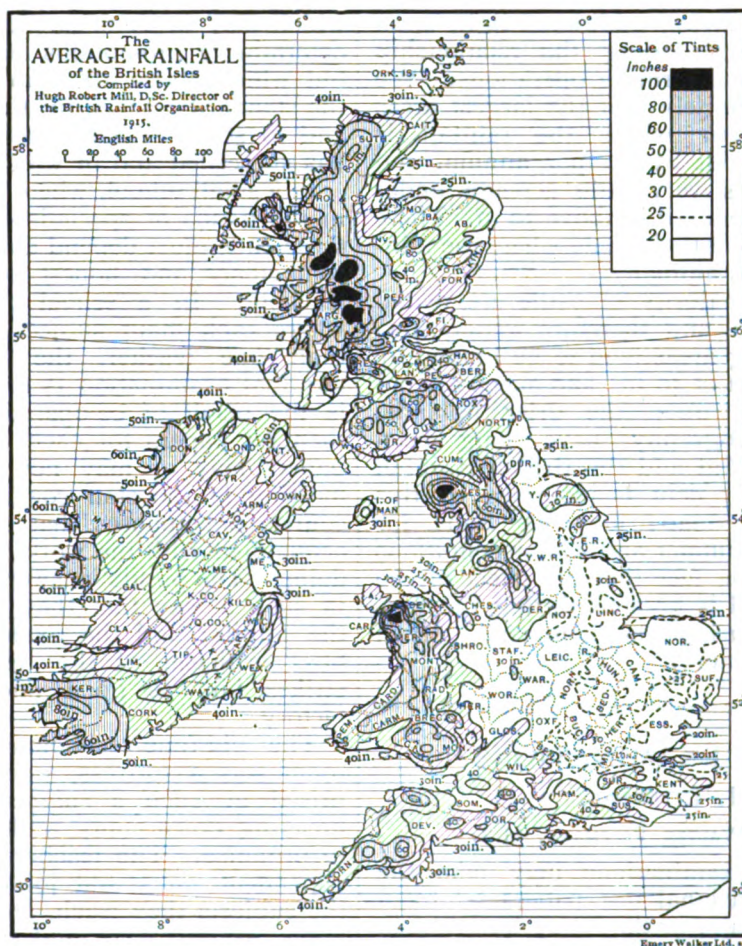
some 16 lbs., is allowed for every fifty. The number of portions to be obtained from the made dishes is stated to those who serve at the carving table; it is part of the game to make these dishes go one, or even two, better.

It is with much diffidence that these contributions to the study of a poorly ventilated subject are put before the school world. They will, however, serve their purpose if they encourage other amateurs to relate their experiences, even though we have to make the lamentation of old: *aerumnabilis experientia me docuit*.

THE RAINFALL OF THE BRITISH ISLES.

THE accompanying illustration indicates the result of most recent research regarding the annual rainfall of the British Isles. Dr. Mill uses the term "average" rainfall and implies by that term the *mean* of the rainfall values as determined separately for each of a given series of years, where the word *mean* is used to indicate the result of the necessary arithmetical computation; he lays stress upon

the distinction between mean and average and would emphasise the idea that "average" implies a period of time. The standard maps which have been available for school use hitherto are contained in Bartholomew's "Atlas of Meteorology," where the map is dated 1897, and, as regards Great Britain, in the volumes of the Cambridge County Geographies. Dr. Mill's map is an improvement upon these maps since it goes into greater detail by adding to them the isohyet for 50 in., and since it determines debatable



areas where map-makers have been wont to give different rainfall values; for example, the 30-in. isohyet is placed by Dr. Mill much nearer to the Welsh boundary, and the rainfall of the Wirral peninsula is given as less than 30 in. per annum. Dr. Mill, further, adds definitely to our knowledge by the sinuosities of his isohyets, for every indentation of these is replete with meaning for those who are familiar with the relief of the land.

We allow our pupils to discover that the rainfall upon the hills of Britain is heavier than that upon the neighbouring lowlands;

this new map will facilitate such a discovery. In fact, we shall be able to push the idea to a greater degree of elaboration for we shall now have the details, for instance, concerning the North and South Downs, the Tyne and Aire Gaps, the Grampians and the Wicklow Heights. In the Cornish Peninsula the effect of the minor elevations of Dartmoor, Exmoor and Bodmin Moor are apparent at a glance, and the details of Dr. Mill's map will permit us to enlarge small areas of Britain so as to show more precisely the connection between relief and rainfall.

This map also throws additional light upon our information regarding the relationship between rainfall and farming operations. We can say more definitely that the largest areas under wheat occur where the rainfall is approximately about 25 in. per annum. and also that there is very little acreage under wheat where the rainfall is above 30 in. There are a few large areas under oats where the rainfall exceeds 40 in. annually.

Although the majority of cattle are reared upon the western, and therefore wetter, lowlands, the grazing areas tend to be limited by the annual isohyet of 40 in., and sheep are not numerous except upon the drier uplands. Teachers of geography have long been indebted to Dr. Mill and the British Rainfall Organisation; our debt is increased by this extremely useful map; may we hope for typical maps of summer and winter conditions to demonstrate the fact that the effect of the hills upon rainfall is greatest during the winter and least during the summer? Much inevitably wants more.

SCHOOL EXAMINATIONS.¹

II. INTERNAL.

By PROF. WALTER RIPPMMANN, M.A.

INTERNAL examinations may take the form of occasional test papers set by a teacher for his class, or they may be a test in all subjects at the end of the term. The former may be part of a general scheme; some schools set apart two consecutive periods every fortnight for testing the main subjects of the curriculum in turn and have only one general examination, at the end of the school year.

The occasional test paper is valuable to the teacher, as it enables him to gauge the efficiency of his teaching. To find that what you thought had been fully explained and understood has evidently not been assimilated by the pupils, makes you at once more humble

and keen to improve your methods. For the pupil the necessity of doing a certain amount of work in a certain time is a valuable discipline; it teaches him to make the best use of the time available. It need scarcely be said that the corrected answers of the pupils should be returned at the earliest possible opportunity.

The terminal examination is naturally regarded as a more serious matter; the mere fact of a week or so being set aside for the purpose is impressive. We have here an attempt to test the whole of the term's work, which may to some extent serve the object of determining promotions and awarding prizes, but which above all is to afford evidence of the standard reached by the form as a whole and to show in which respects the teaching has succeeded and in which it has failed.

In a small school, where the work is largely in the hands of specialists, the attainment of these ends must depend almost entirely on the competence and honest self-criticism of the teachers. In a school of larger numbers, where each main subject is taught by more than one teacher, the usefulness of the terminal examination is much increased if it is the result of co-operation. The teachers then set papers for each other's classes—the papers may or may not be discussed at a meeting of the staff concerned—and this, of course, presupposes that they are intimately acquainted with the work their colleagues are doing. The pupils' answers are then corrected in such a way that they can be returned to the pupils; and the examiner also writes a brief criticism of the results, stating what strikes him as good and what as unsatisfactory.

The old-time schoolmaster, whose classroom was a fortress, would have been surprised at such a suggestion; but we are breaking down many walls, and are learning to organise. The teachers are no longer independent units, but jointly responsible for the subjects they teach, and every one should know exactly what and how his colleagues are teaching. The terminal examination forms a valuable means of attaining this knowledge; and in order to set a suitable paper for a class, it is highly desirable to see that class at work. It may be objected that our teachers have little time to spare; as a rule, they have a daily period off, but they require this for correcting exercises. I am the last to desire that our teachers should be burdened with further work; but I am sure that an occasional visit to a colleague's class would be an interesting change and helpful to the school work as a whole. At present it is only the head of the school who visits the classes

¹ Continued from p. 125.

and, at rare intervals, an inspector; but the former is not a specialist in all subjects, and therefore may hesitate to criticise, and the latter, though a specialist, may criticise without adequate time for threshing the question out. Among colleagues, on the other hand, such visits may lead to a frank and fruitful exchange of opinions.

I am inclined to go still further and to suggest that teachers might occasionally be let off a morning or an afternoon for visiting a neighbouring school. In educational matters, at any rate, protection is a mistake; we must have free trade in ideas. The work we have in hand is of vast national importance, and we cannot afford to let competitive jealousy stand in the way of efficiency. It is particularly the small school, with its single specialist, that needs stimulation from without; for purposes of mutual criticism two or three neighbouring small schools should come to a working arrangement in the matter of examination and the visiting of classes.

The Board of Education recently instituted an excellent scheme by which young teachers of promise were enabled for a fortnight to attend at some other school and learn from the practice of a teacher of recognised skill, a substitute being provided. County authorities which administer a considerable number of secondary schools might well adopt a scheme of this kind; there is no reason why they should not employ a skilled peripatetic teacher to take the place of the teachers who are "on school visiting leave," in which case the schools would be doubly benefited. Smaller counties might combine for the purpose. This is, perhaps, scarcely the time for adopting a scheme that would involve additional expense; but it may be worth noting until circumstances are more propitious.

Attention may be directed to a few points connected with the practical work of examining. No avoidable difficulties should be allowed to hamper the pupils: thus the papers should not contain an excessive number of alternative questions; the wording should not be ambiguous; and the hardest questions should not come first, for this always has a depressing effect. A secondary consideration, though not without some importance, is that the conditions of place and time should be suitable. Preferably the examination should be held in the usual class-room and within ordinary school hours. Special precautions to avoid copying should be unnecessary; indeed, where the right spirit pervades a school they would be resented. The length of the papers, and the number taken in one day, should be carefully adjusted to the age of the pupils.

Both the work of the pupils and the examiner's marking will be more careful if the papers are afterwards returned to the pupils and discussed with them. If the teachers are to have sufficient time for conscientious correction and for discussion of the work done, the end of the examination should leave a clear week to the end of the term; in the summer term it may well be more. A great deal is to be said in favour of getting through the annual examination early in July, and spending the remaining three weeks in rather desultory work. It is not a good month for strenuous toil, but it is an excellent time for ranging over fields a little off the beaten track of school studies. Silent reading of good books, informal lectures on art, voluntary work in carpentry or cooking, nature rambles, historical plays: there are so many ways of filling delightfully these summer weeks. No homework, and so none of the usual corrections for the staff, who consequently have leisure to correct the examination papers, to comment critically on the results and to return them. I am sure this is a better plan than to work right through the summer term up to an examination at the end of July.

The examiner's personality shows itself even more in the marking of papers than in the setting of them. One makes huge blue pencil marks, another corrects with painful care in red ink; one confines himself to what is strictly necessary, another adds comments of a sarcastic or indignant character. Again, one lacks appreciation of what may fairly be expected of boys and girls, or over-estimates the work he has done for his class, and applies an inordinately high standard; while another goes to the other extreme, and marks with excessive leniency; and a third may produce unduly favourable results owing to the careless overlooking of mistakes or a constitutional inability to notice errors. Anyone who has had opportunities of seeing the same proof sheets corrected by several people, all equally anxious to note mistakes, will know what I mean.

Interesting variety may be observed in the assigning of maxima to the questions in a paper. Some like to give very high maxima, which generally leads to an undeservedly high average mark per cent. Others allot relatively high marks to what most others would consider relatively unimportant questions. Some are careful that the maxima should total up to 100—or to 95 with 5 marks for "neatness" or "style," although this should be regarded as a necessary requirement, not deserving a bonus. Others do not mind what the maxima amount to, because they make use of one of the mechanical devices for obtaining the per-

centage mark. The plotting of curves to show graphically the results should be a regular part of the examiner's work.

In addition to the written test there should also be an oral test in foreign languages, at least for the beginners, and, unless speech is very good, in English. The best way of carrying out this test is to enlist the co-operation of the class, because it keeps all usefully occupied. Each pupil in turn comes forward and, facing the class, reads a passage aloud, and, perhaps, answers some questions or gives a short narrative; the teacher and all the others listen and assign marks. It will be found that when the average given by the pupils is obtained, it will correspond very closely with the teacher's estimate.

I have suggested that this test should be applied in English as well as in foreign languages, and I sincerely hope that some such incentive to better speech will soon be adopted. Our examinations have been too much confined to writings. In natural science the necessity of a practical test is acknowledged, but in language work it is too often thought superfluous to test the command of the spoken language. It is something to be able to write out a beautiful poem in a good legible handwriting; but as an examiner I should like to know whether the writer can also hear the beauty of it; and this is scarcely possible unless he can read it out, I will not say with dramatic power, but with clear and pleasing articulation and with an intonation that shows appreciative intelligence.

DECIMALS AND THE DECIMAL SYSTEM IN ENGLISH SCHOOLS.¹

By S. LISTER, B.Sc.

The County School, Uxbridge.

II.

A PUPIL who has realised the full significance of the subjects dealt with in my first article has learned many useful facts with regard to decimals and the decimal system. The introduction of graphs at this stage is useful, but if they consist of mere plotting of points and finding areas and distances, they have little value. Experience has shown that after the pupil knows how to plot two sets of related numbers, it is better to produce some graphs already drawn and get them to read the story which the graph unfolds, particular attention being paid to the increase or decrease and the rate of increase or decrease; graphs which show a continual increase, but the rate of increase is (1) constant, (2) growing, and

(3) falling, will be readily interpreted after some examples have been considered. Convenient statistics to plot are—

(1) The populations of England and Wales, Scotland and Ireland.

(2) The barometric and thermometric chart for a week in which the weather has varied somewhat.

(3) The rainfall for the various months of a certain year, and the averages for several years.

These are best drawn in sets on sheets of plain paper, and the graphs in each set compared and contrasted. Very intelligent interpretations of the graphs will be given by even the youngest pupils, and the fact that the graph for a constant rate of increase or decrease is a straight line will be readily obtained without any prompting on the part of the teacher. Thus pupils realise at once that a graph showing the relation between inches and centimetres is a straight line, and that only one relation between the units is necessary to draw the graph. The graph having been drawn, some results should be obtained from it and verified by calculation. The choice of scale and the reading of the results provide useful exercises in reading in decimals.

Moreover, the graphs should also be used to emphasise the fact that when extrapolation is to be used, the given point must be plotted and joined to the origin accurately, as the error is multiplied by producing the graph, whereas if interpolation is to be used, any error made in plotting and joining is lessened. Some of the results in the tables might be verified graphically, care being taken to have the chosen points as far as possible from one another.

Previous to the extension of the graphical abacus for integers to fractions of the unit, it is, of course, unnecessary to have any formal study of fractions, the only points necessary being the meaning of a fraction and the principle that numerator and denominator may be both multiplied or divided by the same factor without altering the value of the fraction. This principle is readily obtained by considering such simple actual units as the pound, the shilling, the pound (av.), the stone, the chain, etc.

Addition and subtraction of decimals should be introduced by actual measurements or weighings in metric units, *e.g.*, the measurement of the whole and the parts of a line. No difficulty is then experienced with the decimal point, as the knowledge of the subdivisions of the metric units strengthens the idea of place value. The decimal system of weight should be introduced into the course

¹ Continued from p. 130.

soon after the decimal system of length, and a similar treatment adopted. Thus the pound should be weighed in grams, and the Kilogram in pounds and ounces. The latter is almost exactly balanced by 2 lb. 3 oz. and a half-penny (a half-penny weighs one-fifth of an ounce). A similar set of tables to those for length may then be constructed by means of graphs or calculation, or both. The pupil will then have a permanent record of rough equivalents to which he has ready access. Simple problems involving very simple conversions can then be worked by the method of unity, considerable knowledge of both systems being thereby obtained and some facility in manipulation acquired.

An early introduction of the decimal systems of coinage is also desirable. Card-board models of German coins may be obtained, and there are excellent pictures of French coins in Dent's "First French Course." A pupil's interest is stimulated by actually handling the models, when the systems of foreign coinage *are first introduced*, and tables of equivalents may again be made. Mental and written questions similar to the following then present little difficulty:—

If a pound of butter in England costs 1s. 3d., what would a kilogram cost (a) in English money, (b) in French money? (Reckon 5 kg. = 11 lb., and 1 fr. = 10d.)

If a journey from Liverpool to New York costs £10, what will a journey from New York to Liverpool cost in U.S.A. coinage? (Take \$1 = 4s. 2d.)

Multiplication and division of decimals can now be introduced by means of concrete examples and an element of reality given. The consideration of the area of a rectangle when the sides are given in metric units will show that the multiplication may be performed as for integers, and the position of the decimal point may be discovered by the pupil himself by suitably changing the unit. Rough checks must not be forgotten for fixing the decimal point. Pupils might occasionally be asked to construct examples which would involve certain operations, *e.g.*,

$$3.62 \times 1.45, \quad 3.62 \div 1.45.$$

The purely artificial and abstract examples would now be reserved for producing precision, accuracy, and a capacity for dealing with long calculations. In division of decimals, the use of metric units makes the exact value of the remainder quite clear. Only a small percentage of pupils realise that when the divisor in a division of decimals is brought to integral form by multiplying divisor and dividend by the same number, the remainder

is thereby altered. An example such as the following clears up the difficulty at once:—

How many pieces of wire each 0.27 metre long can be cut from a reel of wire holding 50 metres?

It is obvious that the number of pieces is unaltered by expressing each of the given lengths in centimetres, and that the remainder will be centimetres.

Experience, however, goes to show that the best way of teaching division of decimals is not to alter the form of the divisor and dividend at all, but to obtain the position of the decimal point in the answer by a rough approximation, and then the remainder is obtained by placing the decimal point under that in the dividend. The position of the decimal point in the quotient may afterwards be checked mentally by moving it in divisor and dividend.

When dealing with areas, the unsuitability of the acre as a unit of area is obvious. Pupils have to be cautioned against finding the square root when the area is given in acres. They should make a note of the fact that the side of a square the area of which is an acre lies between 69 and 70 yards (nearer 70). Incidentally, the fact that numbers with the same digits have not the same digits in their square roots is learned from the above discussion, and pupils will suggest a suitable metric unit of area for measuring land, giving the reason why 10,000 or 100 rather than 1,000 or 10 sq. metres is chosen. The convenience of the link and chain as decimal units in the English system will be evident, and reduction should be done at sight, *e.g.*:—

Express 134,500 sq. links in acres, sq. chains, sq. links.

It is useful to mark out, either in the playground or to scale, squares having an angle in common, and having sides 10 metres and $\frac{1}{2}$ chain respectively, to emphasise the fact that an acre is a square Decametre, and that its rough English equivalent is one-fortieth of an acre. The fact that 100 Ha. = 1 sq. Km. should also be verified.

Further, in dealing with square measure and cubic measure, the use of the rough equivalents already discovered in the linear measure is valuable in emphasising the fact that the numbers in square measure are the squares, and the numbers in cubic measure are the cubes, of the corresponding numbers in linear measure, *e.g.*,

$$2.54 \text{ cm.} = 1 \text{ in.}, \quad 2.54^2 \text{ sq. cm.} = 1 \text{ sq. in.}, \\ 2.54^3 \text{ c.c.} = 1 \text{ cub. in.}$$

The litre and the pint should be introduced together and compared by actually pouring water from a graduated pint measure into a

litre flask. The fact that the litre is the unit of capacity should be emphasised by suitably chosen oral examples, *e.g.*,

If a litre of wine costs 7s., what would a pint cost?

How would you expect milk to be sold in France?

If milk costs 2d. per pint in England, how much will be paid for a litre in France? (Reckon 1 litre = $1\frac{3}{4}$ pints and 10 centimes = 1d.)

The relations between the units both in the English and French systems are too often neglected—they are, indeed, frequently omitted altogether from the tables given in elementary arithmetic text-books. They should be found by means of practical work. An open cube, edge 1 decimetre, is quickly and easily compared with a litre measure by pouring dry sand from one into the other, and a litre of water should be actually weighed. The relations between the metric units are thus verified. The simplicity of these relations as compared with the English system is made clear by finding the relations between the English units in the lessons immediately preceding or following. They may also be obtained by practical work in the class-room. A pint measure should be counter-balanced, and then a pint of water weighed in pounds and ounces. The cubic foot and the gallon are easily compared by pouring dry sand from a pint measure into an open cardboard cube, edge 6 inches. The cube is found to contain $6\frac{1}{4}$ pints, and its volume is $\frac{1}{8}$ of a cubic foot. Thus 1 cubic foot = $6\frac{1}{4}$ gallons or 50 pints approximately. The weight of a cubic foot of water is easily deduced:—

1 cubic foot = 50 pints;

\therefore 1 cubic foot of water weighs $50 \times 1\frac{1}{4}$ pounds = 62 $\frac{1}{2}$ pounds.

The exactness of the relations between the metric units should be emphasised when experiments on the density of water have been performed.

Finally, an oral discussion (or a written essay) on the relative advantages of the English and decimal systems should be undertaken, with headings such as the following:—

(i) The standard units and how they are fixed.

(ii) The relations between the units.

(iii) The subdivisions of the units and reduction.

(iv) The English rules which would be rendered unnecessary by the adoption of a decimal system of money and weights and measures.

(v) The different tables used by the English grocer, chemist, and jeweller.

(vi) The value of each system as an international system.

(vii) The transference of goods from one country to another and the effect on British manufactures.

(viii) The comparison of the results of the world's men of science.

(ix) The special anomalies of the English system.

(x) Practical difficulties in the way of adopting the decimal system.

The above forms a suitable homework exercise, as pupils discuss the question at home and often bring new facts under the teacher's notice.

To sum up:—

1. The two systems should, so far as possible, be considered concurrently, and the decimal systems of length and weight introduced when decimals are first taught.

2. Practical use of the units is essential.

3. Some of the models in the manual work should be made with metric scales.

4. Rough conversions should be worked early in the course by the method of unity.

5. Problems in decimals should contain many more concrete examples than is usual.

6. The relations between the units should be considered of greater importance than some of the subdivisions of the units, especially in the English system; and the simplicity of the relations between the units in the metric system emphasised.

7. Pupils should be encouraged to recognise it as a duty to the State to try later in life to bring about the adoption of the metric system.

PERSONAL PARAGRAPHS.

THE war has again claimed victims from among those schoolmasters who are serving their country at the front. Second Lieutenant W. G. Fletcher, an assistant classical master at Eton College, was killed on March 20th, near Bois Grenier. Mr. Fletcher was a scholar at Eton from 1901 to 1906, and captain of the school in his last half; he then went up to Balliol College, Oxford. In 1910 he went to Germany and for six months taught English in the Real Gymnasium at Schleswig; on his return to England he held for a short time a mastership at Shrewsbury before going to Eton as a master in 1913. On the outbreak of the war he became an interpreter in the Intelligence Corps; he saw much service between going out on August 12th, and March 20th; in February he was mentioned in Sir John French's dispatch.

SECOND LIEUTENANT H. G. MAY died at Boulogne on March 27th of wounds received at St. Eloi on March 14th. Mr. May was educated at Sherborne School and Trinity College, Dublin. He held masterships at Kelly College, Tavistock, Llandovery College, and Clifton College before returning to Sherborne School as a master in September of last year. His tenure there was of only a few week's duration; he joined the 3rd Dorset Regiment and on transferring to the 1st, went to the front at the beginning of the year. The headmaster of Sherborne School writes: "His was eminently a case in which offering his services for the war was a deliberate act of self devotion. No one could have been happier than he in working at his old school. His manly, serene, and sympathetic nature fitted him ideally for the work. His school could not have sustained a greater loss, nor can it cherish a nobler example for its present and future sons."

* * *

CAPTAIN E. S. P. KINGSBURY JAMES, 4th Battalion King's Royal Rifle Corps, was killed in action on March 17th, and was buried at Dickesbusch, four miles south of Ypres. Captain James was educated at Manor House School, Clapham, St. Paul's School and at Corpus Christi College, Cambridge. He was a master first at Oundle School, and afterwards at Merchant Taylor's School. His commanding officer wrote: "I cannot tell you what a great loss he is. . . ." and his Colonel at Sheerness: "He was most popular, looked up to by everybody, and was a very smart and efficient soldier."

* * *

MR. LOUIS M. MORIARTY is retiring from Harrow School. Mr. Moriarty was educated at Brighton College and Magdalen College, Oxford; he was a fellow of, and formerly professor of French literature at, King's College, London. Mr. Moriarty went to Harrow in 1889, and has been in charge of the Army class since 1890. In 1908, he went to the Grove, the house made famous by the late Mr. E. E. Bowen.

* * *

SIR PHILIP MAGNUS has resigned his position as superintendent and secretary of the Department of Technology of the City and Guilds of London Institute, an office he has held with distinction and to the great advantage of technical education for a period of thirty-five years. Among his early duties was the preparation of schemes for the Finsbury Technical College and the City and Guilds Technical College now incorporated

with the Imperial College of Science and Technology. Sir Philip was for many years president of the Association of Manual Training Teachers; he held the presidency of the Association of Technical Institutions in 1905, and of the Education Section of the British Association in 1907. In these positions and in many others too numerous to mention he has directed his efforts to the object, as he himself said, "of securing to every child, in whatever rank of life he may be born, the opportunity of developing his abilities to the highest educational level, and of recognising the close relation to be maintained between training and environment."

* * *

LONDON education has suffered a severe and unexpected loss in the death on March 23rd, of Dr. Rawson, the principal of the Battersea Polytechnic. Dr. Rawson was educated at Charterhouse School, the Royal College of Science, University College, London, and University College, Liverpool. He took the degree of Doctor of Science at the University of London, became lecturer in chemistry at University College, Liverpool, and in 1895, was appointed principal of the Huddersfield Technical College. In 1903, Dr. Rawson became director of education to the Worcestershire County Council, and in 1907, he was appointed principal of the Battersea Polytechnic. Success in such a series of appointments speaks the power and personality of the man.

* * *

THE Governors of Dover College have appointed Mr. W. S. Lee, headmaster of Cranbrook School, to the headmastership of Dover College in succession to the Rev. F. de W. Lushington who is leaving for the Continent to become a Chaplain to the Forces. Mr. Lee was educated at Dover College, and at Wadham College, Oxford, where he became the Symon's Exhibitioner in 1893. He returned to Dover College as a master in 1894, became housemaster of day boys in 1900 and left to go to Cranbrook as headmaster in 1908.

* * *

THE Rev. C. F. Pierce, chaplain and senior house master at Giggleswick School, Settle, has been appointed to succeed Mr. Lee as headmaster of Cranbrook School. Mr. Pierce was an Academical Clerk and Ellerton Hebrew Exhibitioner at Magdalen College, Oxford, was chaplain and assistant master at Cranbrook School from 1906 to 1908, when he went to Giggleswick School.

* * *

MR. J. W. GILBERT has for the third time been elected Chairman of the Education Com-

mittee of the London County Council. Mr. Gilbert has an extensive and detailed knowledge of the education system of London and has what is still more important in the Chairman of that Committee, a first hand knowledge of teaching and wide sympathy. Mr. Gilbert joined the Education Committee in the first instance as a member co-opted in the Roman Catholic interests.

* * *

ANOTHER London County Council election is of interest to teachers; Major Ernest Gray has been elected as Vice-Chairman of the County Council; as such he is an *ex-officio* member of all Committees and Sub-Committees of the Council, and among them the Teaching Staff Sub-Committee.

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ALL his former pupils will deeply regret the death of Prof. W. Grylls Adams, F.R.S., emeritus professor of natural philosophy and astronomy in King's College, London, and formerly fellow of St. John's College, Cambridge. Prof. Adams was a past president of the Physical Society, of the Institution of Electrical Engineers, and a member of the Mathematical Society. He retired from his professorship at King's College in 1906.

* * *

MR. J. Y. SARGENT, who died on March 21st at the age of 86, was a scholar of the old fashioned type, to whom Latin and Greek were a delight as languages, over and above their literature. Like others of his kind, of which the late J. E. B. Mayor was a notable example, he did not confine his studies to the classics; he was a good Spanish scholar, and he wrote grammars of Norwegian and Danish. It is a pity that students of modern languages do not generally realise that the classics are an invaluable foundation for all study of language, for they often suffer from the lack of wider training. Mr. Sargent had a great influence on classical study through his well-known "Materials and Models for Classical Composition." But his real work lay in teaching, and what that was can never be known; such work is in its nature individual and secret. His death will recall to the pupils of many generations how much they owe to him. Mr. Sargent was twice elected Fellow of Magdalen, with an interval of wedded life, and afterwards Fellow and Tutor of Hertford.

* * *

THIRTY years ago a Report on Geographical Education at Home and Abroad was presented to the Council of the Royal Geographical Society by an inspector who had been

specially appointed to inquire into the position and methods of geographical instruction, with the object of improving and extending this subject in the United Kingdom. The inspector was Dr. J. Scott Keltie, who has just resigned the office of Secretary of the Royal Geographical Society held by him since 1892, and has been succeeded by Mr. A. R. Hinks, formerly chief assistant in the Cambridge Observatory and lecturer in surveying and cartography in the university. Dr. Keltie's report was the first steps of a movement which has brought geographical education to the position it now occupies, thanks largely to the society he represented. Two great weaknesses in the teaching of geography in schools were pointed out—"want of knowledge in the teachers and want of organisation in the programme and methods." It cannot be said that these defects have been remedied entirely, but there is a vast difference between the status of the subject to-day and that described by Dr. Keltie in 1885.

* * *

THE notable work begun by the Royal Geographical Society has been carried on with much success since 1893 by the Geographical Association, and the educational claims of geography can no longer be disputed. Before going to the Royal Geographical Society as librarian in 1885, Dr. Keltie was for fourteen years sub-editor of *NATURE*; and during that period as well as later he contributed hundreds of articles upon geographical subjects to the *Times* and other leading journals. His "Applied Geography" and "The Partition of Africa" are standard works; and "The Statesman's Year-Book," edited by him since 1880, is a marvel of completeness and accuracy which we hope will have the benefit of his knowledge and experience for many years.

ONLOOKER.

MANUAL WORK IN SECONDARY SCHOOLS.

THE "Notes on Manual Instruction in Secondary Schools for Boys," issued by the Board of Education,¹ will be welcomed and studied with interest by all teachers of manual training—would that one could write, by all teachers, without the qualifying clause. The pamphlet deals briefly with the provision and equipment of workshops, discusses courses of instruction for both the junior and the main schools, mentions the use of machinery, the care of tools, the place of drawing, and concludes with a paragraph on the boy and the

¹ Circular 891.

workshop. As a sign of the times, its appearance so soon after the publication of the report of the Consultative Committee of the Board on practical work, is encouraging.

Its tone, too, is in general all that the practical man could wish. It even recommends the system of instruction which, in many schools, now replaces the old-fashioned rigid scheme of "exercises" and "models," with its small demand on the intellectual and inventive powers of the pupil. The modern plan allows the pupil all possible latitude, and its advantages are obvious; but if its full value is to be realised, conditions must so be altered that suitable men may be employed. The highest teaching qualifications, great technical skill in craftsmanship, and a wide knowledge of pure science, must be combined in the person of an instructor who, while reserving to himself that general control which is necessary for the development of any course, leaves his pupils to their own resources as much as possible.

Several interesting instances are given of co-operation between teacher and pupil arising from work on inventional lines. But the schools from which these were taken must be peculiarly fortunate. The circular recognises the importance of skill and of a high, but variable, standard of accuracy. As the time available for manual work varies in different schools, suggestions are offered for courses extending over two, three, four, or more years, and stress is rightly laid on the fact that boys having special interests ought to receive special consideration. The place of drawing, too, in the scheme is admirably stated; utility and shop practice are all but infallible guides.

It is, however, the closing paragraph of the notes which most appeals to a teacher interested in the science of education. "The workshop should not only be looked on as a place where formal lessons are regularly given, but also as a place where a boy may carry out any constructive ideas in connection with problems arising out of his school or home life." The advice is excellent, but does the Board not yet realise the importance of replacing their permissive attitude towards manual training by a more constructive and even compulsory policy? It is not so much that the workshop should "aim at definite association with such subjects as science, mathematics, geography, and art," but that teachers of science and mathematics alike should recognise in the workshop the source of practically all the problems of educational value with which they have to deal. The Board confuses cause and effect and reverses the logical order. The ideal course of educational handwork involves a combination of natural science, art, and physical gymnastics: in it thinking and doing are intimately

associated, but the necessity for thought arises from the act of doing. In the mathematical classroom, as in far too many of our science laboratories, lessons are conveyed by means of artificially contrived incidents and the development of the subjects is arbitrary and unnatural. The work lacks that air of reality which belongs to investigations arising directly from a problem which is really "practical," the solution of which is really necessary.

If once educational authorities realised the value of this aspect of manual training, suggestions for formal courses of work and recommendations as to the extent and duration of such courses would be ridiculous. The work would naturally continue until consideration of the problems arising therefrom would absorb all the time available. By this time every boy would have received that minimum systematic instruction in handwork which the Board recognises as desirable; while it would be as easy to cater for the "specialist" in handicraft as for the specialist in any other subject.

The circular will undoubtedly be of assistance to governing bodies and masters who wish to arrange courses in manual instruction. It is pointed out that the educational value of manual work as part of the normal course, its particular value for a certain type of boy, and the necessity for the course to be under the supervision of a regular member of the staff, are discussed in the report previously referred to. Unfortunately, the governing bodies and masters who would naturally read such a report are already converted, and the latter are probably capable of arranging courses without the Board's valuable assistance. It is the others, those conservative, old-fashioned governors and masters, to whom everything new is anathema and who consider that a literary training is the only form of education really worth while, for whom the Board must legislate. It is useless, as on p. 4 of the circular, to say that "for pupils below 12 the provision of manual work should be abundant: it is usually meagre and insufficient." Notes of this kind are valueless; they carry no weight, and do not reach the right people. What is wanted is a definite and authoritative ruling: A training on workshop lines is now of more importance than ever. It is all but essential to the continued development, if not the very existence, of our country. It must become an integral, as it is an essential factor in a liberal education.

The following paragraphs are from the circular:—

The Board contemplates that all boys during some period of their secondary-school career should receive systematic manual instruction; that, as a rule, the course should extend at least up to the age of four-

teen; that in many schools it can profitably be continued for all boys up to sixteen; and that in all schools there should be facilities for continuing manual instruction as a voluntary subject, or as a special subject for particular boys, up to the time of leaving the school.

WORKSHOPS.—A workshop, properly fitted and equipped is essential. Almost any large room may be used, but the closer it approximates to the type of an ordinary workshop, the better. The fittings should as a rule be as simple as possible. The working benches should be rigid and not all of the same height. There should be a grind-stone, a sink with water supply, and provision for heating soldering-irons, etc. Provision should be made for a certain amount of metal-work to be done. There should in all cases be a small reference library of workshop books.

COURSES OF INSTRUCTION.—(A) *The Junior School.*—For pupils below twelve the provision of manual work should be abundant; usually it is meagre and wholly insufficient.

The exercises should be both simple and varied. They lose their usefulness if they become elaborate, while interest is rapidly diminished by monotonous repetition. The earlier work may be incidental and connected with other subjects, but caution is needed against the excessive use of handwork for purposes of illustration.

Every effort should be made to awaken the inventive powers of the boys, but the teacher must always guide the work and see that it is properly graded, with increasing attention to accuracy. By the time a boy reaches the age of twelve, he should be familiar with the simpler uses of the commoner tools, mainly those of the carpenter's shop.

(B) *The Main Portion of the School.*—There should be a definite course of workshop practice from the age of twelve to at least the age of fourteen, taken in weekly periods of from one and a half to two hours.

As a rule, wood is the chief medium employed for the formal instruction in the use of tools between the ages of twelve and fourteen. It need not, however, be the only medium, and it is becoming increasingly common to find even younger boys constructing objects which involve the use of metal as well.

The course of work should be based on an orderly sequence of processes. As a rule, any new piece of work should include some one new difficulty; for example, the use of a new tool, or the use of a familiar tool in a new way. Definite instruction in the use of every new tool, and less formal instruction on materials used, are always necessary, and a clear explanation, usually accompanied by a practical demonstration, should be given of every new bench operation involving difficulty.

Importance should be attached, not only to principles and methods, but also to craftsmanship. A degree of accuracy suitable to the material and to the development of the pupil should always be exacted. Increase of accuracy should be demanded with in-

crease of experience, and the standard should bear some relation to the length of the course. Too great a degree of accuracy is, however, sometimes demanded in the earlier stages.

The course in woodwork should include the construction and use of the simpler joints employed by carpenters. The more elaborate joints are out of place. The type of object or model made will naturally vary with the locality.

Incidentally, it may be mentioned that the common objects made are sometimes too small and of very little practical use. Utility is apparently overlooked.

In schools where the manual instruction cannot be carried further than the age of fourteen, care should be taken not only to make the course, as far as possible, complete in itself, but also to make sure that it is associated with the special interests of the boys in practical life. Boys with a special bent should always be encouraged.

Where the course extends over a third year, a definitely planned scheme of metal-work ought to be provided; it may, as a rule, begin with tin-plate, zinc, aluminium, and thin brass or copper, iron usually coming rather later. Bent iron-work and flat sheet metal-work may with advantage be taken first, moulded sheet metal-work taking a less important place. If there is a suitable annexe to the woodwork shop, a few simple forging operations may also be included; where there is no special shop it will not be possible to carry the course much further, and the work done will necessarily be restricted in character and on a small scale.

Where a separate shop is provided, there is scope for a much fuller course of metal-work. There is no point in making boys file up such things as iron cubes and rectangular iron blocks for the sake of practice with the file. Screw cutting and drilling and riveting are important operations, and can be taken comparatively early. Simple forging operations, for instance, drawing down, upsetting, scarfing, and simple welding, are useful and interesting, and quite within the capacity of boys of fifteen or sixteen years of age. The necessity for fostering the boys' special interests should still be borne in mind. The construction of a good deal of apparatus, for example, electroscopes and galvanometers, may with advantage be included in a three-years' course, and may well be substituted for some of the more difficult formal operations at the bench and the forge.

In those few schools where the course extends over five or six years, a very considerable amount of technical skill can be acquired in the working of both wood and metal, and a fair proportion of the available time during the last year or two ought to be given up to applying that skill to useful and ornamental work of a reasonably advanced type.

It is often an excellent thing to arrange for the co-operation of several of the more advanced boys, or even of the whole of an upper class, in doing a larger piece of work.

USE OF MACHINERY AND CARE OF TOOLS.—Hand-tools are the first essential in school work. Over-elaboration in machinery is undesirable, but all

machines should conform to patterns in actual workshop use. The course of manual work should in all cases include instruction in the care of tools.

DRAWING.—Drawing should be associated with wood- and metal-work, and the boys should be taught to make scale drawings and to work from them. Isometrical projection is sometimes useful, but in practice it is too often an additional exercise of which no further use is made. After the preliminary stages are passed it is often a good working rule to inquire what the skilled workman would do in similar circumstances; for instance, if he were making a rough nail-box, with the sides nailed together, he would not make a drawing at all, he would merely make a note of the dimensions and of the thickness of the wood; if he were making a set of bookshelves to given dimensions, he would probably make a working sketch; if he were making a cabinet involving first-class workmanship, or an engineer's template, he would consider an accurate scale-drawing indispensable.

THE BOY AND THE WORKSHOP.—Manual instruction should not be regarded as an isolated subject of the curriculum, but should aim at definite association with such subjects as science, mathematics, geography, and art. The workshop should, in fact, be looked upon not only as a place where formal lessons are regularly given, but also as a place where a boy may carry out any constructive ideas in connection with problems arising out of his school or home life. The ordinary boy is full of constructive curiosity which only needs to be carefully stimulated, and it is surprising how much knowledge he will acquire if he is intelligently left alone in the workshop.

MATHEMATICS IN SECONDARY SCHOOLS.

THE "Other Secondary Schools" Special Committee of the Mathematical Association drew up the following report in 1913, and it has been approved for publication by the General Teaching Committee. It is hoped that attempts to widen the mathematical curriculum of secondary schools will receive sympathetic consideration from all who are engaged in teaching. Any suggestions or criticisms forwarded to Messrs. C. J. L. Wagstaff and W. J. Dobbs at 24, Fairfax Road, South Hampstead, London, N.W., will be received gratefully and considered carefully by the Special Committee.

The committee is of opinion that the mathematical teaching in secondary schools is too much influenced by the necessity for preparing the boys for certain external examinations. It desires to direct attention to the fact that the great majority of the boys leave school before they reach the age of seventeen, and that much mathematical matter has to be omitted or unduly postponed which would be useful to them at school in science and other subjects, as well as in after life. It is hoped that examining bodies will make arrangements, by setting alternative papers or other-

wise, so that in some secondary schools at least the mathematical teaching may follow the lines indicated below.

(1) *General Purpose.*—It is desirable that the average pupil should study mainly those parts of mathematics which develop his powers of thinking, and are of practical service as he proceeds in his school course.

(2) *Rigour.*—While rapid progress towards the use of mathematical tools is desirable, at the same time it is indispensable that every mathematical statement should be justified or proved in a way suitable to the stage reached by the student, and the mathematical course should include some training in rigorous deduction from certain explicit assumptions. It is desirable that there should be considerable latitude in selecting the assumptions; these, however, should be stated clearly in the teaching.

(3) *Algebra.*—It is possible to economise much time by omitting as non-essential certain parts of this subject which have usually occupied too much time. In the hands of properly qualified mathematical teachers much of the manipulation can safely and effectively be taught incidentally.

(4) *Trigonometry.*—It is desirable that teachers should be allowed to treat geometry, trigonometry, co-ordinate geometry, and mensuration as one subject. Algebraic methods and trigonometrical functions may be introduced, and used, early in the geometrical course.

(5) *Calculus.*—It is desirable that boys of ordinary ability who attend a secondary school to the age of sixteen should not leave without some introduction to the principles on which the calculus is based.

(6) *Mechanics.*—Though this subject is based on experiment, it is particularly well adapted to a mathematical treatment, and should form part of the mathematical course.

(7) *Solid Geometry.*—There is too great a tendency to limit school mathematics to two dimensions. It is desirable that a simplified study of solid geometry should be commenced early—perhaps in connection with geography, astronomy, and carpentry. The committee feels that this subject has been unjustifiably crowded out by examinations. In connection with this, the committee desires to direct attention to Section 7 of the Report of the Public Schools Special Committee, which reads as follows:—

SOLID GEOMETRY.

The course should include some simple solid geometry, which might be introduced incidentally during the course of plane geometry. The main object of including this work is, that the power of thinking in space should be cultivated throughout. The following suggestions indicate some of the ways in which this may be carried out:

(1) Riders on congruent triangles may sometimes deal with triangles not in the same plane.

(2) The theorem of Pythagoras may be applied to figures in three dimensions, e.g., to finding the height of a cone, of which the slant height and the radius of the base have been measured.

(3) In dealing with some of the properties of the

circle, the corresponding properties of the sphere may be discussed.

(4) Some work may be done on the plan and elevation of simple objects. The purpose of this work is not so much to teach a boy how to draw a plan and elevation of a given solid as to enable him to visualise the solid, the plan and elevation of which are given.

(5) Problems in elementary trigonometry should involve observations in more than one plane.

(6) Examples may be given on the angle between two planes or between a line and a plane. The elementary solids provide material for such exercises.

CAMBRIDGE LOCAL EXAMINATIONS, 1914.

HINTS TO TEACHERS FROM THE EXAMINERS' REPORTS.

COMPULSORY SECTION.—Arithmetic:—Some weakness was displayed by *Preliminary* candidates in the application of square and cubic measure to the mensuration of simple rectangular figures (plane and solid), especially when such application involved the use of the metric system. Many candidates worked out questions of this kind by vulgar fractions, and results, even when correctly obtained, were often misinterpreted.

The answers of *Junior* candidates to a question on L.C.M. were often incorrect, many showing ignorance of the meaning of the terms "Prime Number," "Least Common Multiple." From the wildly absurd answers sent up to questions in both parts of the paper it is evident that many candidates do not understand the importance of considering the possibility of their results.

Problems in the metric system often presented considerable difficulty to the *Senior* candidates. Methods of buying and selling stocks seemed well understood, but a large majority of candidates failed to make a correct allowance for the income tax.

ENGLISH SECTIONS.—English Grammar:—Among *Preliminary* candidates parsing was in very few cases perfect, a gerund being generally mistaken for a present participle. Many candidates confused interrogative and relative pronouns. Analysis was well done at a large number of centres, but the subject was omitted by not a few candidates.

The *Junior* candidates on the whole found the papers easy, but the parsing was not very good. The analysis was generally well done, though many experienced a difficulty in distinguishing the main and the subordinate clauses. A large percentage confused accent and quantity, and did not know how change of accent affects the meaning of some words.

In *English Composition* the spelling of *Preliminary* candidates showed some improvement on recent years, but the details of punctuation, though an attempt to grapple with them was more noticeable, were seldom mastered.

The essays of the *Juniors*, on the whole, were better than in recent years; a larger proportion of the candidates reached a high standard. The bad and mediocre essays were lacking in arrangement and punctuation, and were marred by repetition or elaboration of detail.

Vagueness was still the chief fault in the attempts to distinguish between pairs of similar words.

Very little evidence was given by *Senior* candidates of ability to deal with subjects of an argumentative nature. Candidates frequently contradicted themselves in successive sentences. Omission to indent paragraphs was a common fault. In July, in dealing with a passage set for *précis*, many candidates still disregarded the clear directions as to brevity, and a number merely strung together a few disjointed phrases from the original. Many of the candidates, especially among the girls, carried the stories on suggested subjects to an inordinate length, and their narratives were often foolish and impossible. In December several good reports of a lecture or concert were forthcoming, but many showed faulty arrangement and poverty of expression. An alternative question requiring headings for an essay on a given subject elicited poor results.

Commenting on the *Junior* answers to Shakespeare's "Tempest," the examiners state that in December the description of the masque was, in general, badly done. The paraphrasing was, at both examinations, with few exceptions, poorly done. In December a considerable number of candidates appeared either not to have read the passage at all, or to be ignorant of the meaning of ordinary words. Few candidates failed to reproduce a passage from memory, but in July perfectly accurate answers were comparatively rare, there being many mistakes both in punctuation and in the division of lines.

Of the answers of *Juniors* to the questions on Scott's "*Ivanhoe*" and *Historical Ballads*, the report states that a good deal of knowledge of the subject was shown, but in the case of the *Historical Ballads* there was some confusion as to the authorship of the poems. The explanation of selected passages was in both cases very good, although there was some tendency to emphasise unimportant points, but questions requiring arrangement of material were too often answered by giving lists of items, without any attempt at systematic handling. There was some ignorance of the meaning of "character." A description of the life of a person is not a sketch of his character. On the other hand, the lessons to be drawn from a man's life are not shown by a mere description of his character. And in describing the political and religious changes which affect a man's life it is necessary to show how they relate to his definite action. The girls' papers showed some tendency to prolixity and the introduction of irrelevant matter. Some papers were spoilt by the use of slang.

A very general ignorance of history and geography was shown by *Senior* candidates in the answers to questions on *Childe Harold*, and to a less extent on *Kenilworth*. In explaining the meaning of passages from Shakespeare and Byron few candidates rose above vague and commonplace renderings of their sense; allusions, however, were recognised readily, and often received detailed and intelligent comment. Of the books, *Childe Harold* was less clearly known than the others, but a fair number of candidates showed a close acquaintance with the text, and in such cases a degree of literary appreciation was sometimes evident which the answers on Shakespeare and Scott

can scarcely be said to have reached. The knowledge, however, shown, not only of the story, but often of the actual words of *Kenilworth*, was exceedingly satisfactory.

Noticeable faults in the *English History* answers of *Preliminary* candidates which occurred very frequently were: (1) that in their accounts of great men candidates fixed on some one point, not necessarily the most important, wrote at length on it, and ignored everything else; (2) that the narrative questions were as a rule badly answered, a number of events being merely jotted down without connection and often in wrong order of time; (3) that not only, in many cases, did candidates omit anything that would tell when an event took place, but they gave inconsistent dates.

Junior candidates who confined their work to a single period—especially, perhaps, those who took the earliest period—did better than those whose answers ranged over the whole of the paper. Questions the answering of which required a knowledge of the connection between one sub-period and another were seldom well done, it being rarely the case that candidates showed any coherent grasp of what they had studied. Instead, they contented themselves with serving up isolated scraps of information, showing little appreciation of the general trend of their period and frequently involving themselves in confusions between persons such as Marlborough and Wellington, Thomas Cromwell and Oliver Cromwell, with a consequent chaos in chronology. While it is undesirable that children should overtax their memories with dates, more effort might reasonably be devoted by teachers to seeing that dates acquire a meaning, bringing home the relative distances in time of the great outstanding events of history. It is perhaps worthy of mention that one of the questions in December (a life of the Young Pretender) was practically identical with one set in December, 1913. On the earlier occasion this question was remarkably well answered, many of the papers supplying an unexpected wealth of detail and reading as if the candidates felt an interest in what they were relating. This year the answers to the same question were nearly all poor, very inaccurate, and slovenly in character, thus suggesting there are teachers who study the recent sets of papers with unhealthy thoroughness.

The average standard of *Preliminary* candidates in *Geography* was good, few papers being absolutely worthless. A good knowledge of the distribution and determining causes of our industries was shown by most, but the meaning of geographical terms was generally given inaccurately. The answers to questions bearing on foreign countries and cities showed considerable vagueness as to their relative position.

In the physical geography section the contour maps were generally understood by the *Junior* candidates. The movements of the earth seemed to be known, but candidates were frequently unable to show the connection between these movements and the phenomena of the seasons; apparently globes should be more used in the teaching. In the section on the special continent there was an improvement in the filling in of the maps. The section on the British Isles seemed less well prepared than the others; the

reasons given for the location of various occupations were poor, as was also the knowledge of the situation of certain route-centres in relation to the physical features. Throughout the whole paper a more frequent drawing of sketch-maps to illustrate particular points would be welcome.

The maps by *Senior* candidates of districts of England and of the western provinces of Canada were very badly done, often so in the case of candidates who otherwise did excellent papers. It is impossible to come to any other conclusion than that the teaching and practice of map-drawing have been much neglected. This is confirmed by the unsatisfactory nature of the answers to the questions referring to journeys across Asia: these showed that most of the candidates were quite unable to visualise clearly even a part of the map of that continent. Few candidates showed much acquaintance with relief maps of the areas they described. The fact that many candidates described the coral polype as an insect seems to point to the use of antiquated text-books.

The average standard reached by *Junior* candidates in *Latin* suffered from the large number of candidates who entered, especially for the December examination, without serious preparation. There was general weakness in syntax, but better knowledge of the subject-matter. In the alternative unseen a few achieved remarkable success, but too many ill-prepared candidates failed completely. They should be reminded that this part of the paper is intended for candidates at least as far advanced as those who take the prescribed books. *Accidence*.—In spite of a few excellent papers, the answers were on the whole disappointing, especially in July. The weakness was most marked in the case of verbs: comparatively few candidates could give correctly the principal parts required. The declension of nouns was better done, but even here an unduly large proportion of candidates showed ignorance of regular types. In *Composition* the general average was somewhat disappointing. Even when complete versions were attempted, they were often poor or worthless, showing great ignorance or disregard of elementary accidence and syntax.

The majority of the *Senior* candidates offered Virgil in combination with one or other of the prose books. The translations were, as a rule, fairly well done, and the subject-matter had evidently been prepared, in most cases, with care, but too often there was evidence of a defective knowledge of grammar. The translations of Horace were of very uneven merit, although the subject-matter was fairly well known. Of the comparatively few candidates who took the alternative unprepared passages only a small minority produced renderings of any merit. In *Unprepared Translation of ordinary difficulty*, the general results were very uneven. In too many cases the renderings were so disfigured by blunders as to be practically worthless. These failures appeared to be due to weakness of vocabulary and ignorance of syntax. The *Composition* showed improvement upon the work of the previous year. The girls, in particular, seemed to have been more carefully trained. In July the main fault was inability to write *oratio obliqua*. A large number of candidates would have done better to attempt the

easier piece set for composition, an accurate rendering of which is far more likely to obtain creditable marks than a slovenly attempt at the harder passage.

MODERN LANGUAGES SECTION.—As a general rule the performance of the *Preliminary* candidates in *French* was fairly satisfactory, but in too many cases it was immature and unpromising. The girls were generally better than the boys, although in December a large number of girls were very weak. The grammar was the weakest part of the work in both examinations. It was very bad as a rule, and very few knew the feminine forms of easy adjectives or nouns, the imperatives of *être* and *avoir*, or the tenses of the commonest verbs. The translation into English was usually well done, though a good many candidates were weak in vocabulary. The translation into French was mostly fair in July, but very weak in December. The imperfect seemed to be the only past tense known to the majority. There was much promising work done in giving answers in French to certain French questions. Some had evidently been taught on conversational lines and gave answers nearly correct phonetically, which they were unable to spell, as, for instance, *Cavez vous faites yierre* or *Il ne peu pas l'attrapai*.

In *French Composition*, the great majority of *Junior* candidates chose the passage of English for translation into French. Although the standard attained was higher than at the last examination, there was the usual carelessness and disregard of the elementary rules of grammar and syntax. Very few of the free compositions reached a satisfactory standard. The sentences were not well done.

The answers of *Junior* candidates in *Spoken French* were too frequently very badly constructed, and there was great inaccuracy in the use of the tenses. Many candidates also showed little ability to understand simple questions put to them by the examiner; comprehension of the questions is a most important part of an oral examination. There was a marked deficiency in vocabulary; the most ordinary words were not known, and it would seem that many candidates were placed at a disadvantage because they did not offer a prepared book as a basis of conversation. The dictation was written well by candidates from schools where sufficient attention had been given to the subject. There were many failures in this part of the examination, since candidates made gross blunders in elementary grammar and failed to spell the most ordinary words.

In July the translation of *Senior* candidates from *French* into English was, with few exceptions, decidedly bad, partly from weakness in vocabulary, but chiefly from want of practice. The lack of accuracy and the careless work of a large proportion of the candidates point to radical defects in the prevailing methods of teaching, which may be a result of an exaggerated application of the direct method. The prevalent faults at many centres were the unnecessary paraphrasing of the passages and a disinclination to use the simple equivalent of the French word in translating, due apparently to the idea that a literal translation can in no circumstances be right. In December the translations of the first passage

showed a surprising ignorance of common French words; the versions of the other passages sent up by the majority of the candidates, particularly the boys, showed a marked improvement, though the same tendency to unnecessary paraphrasing was again noticeable. Despite this, the general impression made upon the examiners was that the valuable exercise of translation into English is much neglected, and is replaced by a system of "rapid reading," which breaks down when tested. The free composition was often full of careless mistakes and impossible words, and was as a rule written less well than the ordinary composition. The general standard of the work in July was markedly below the average of past years.

The results of the *Seniors* in *Spoken French* as a whole showed distinct improvement. The reading was satisfactory, and often reached a high standard. The conversation, if deficient in readiness, was more correct than in previous years. There was still considerable inaccuracy in the use of the tenses, and the vocabulary possessed by many candidates was surprisingly limited. The small amount of French books now read in schools, since a prepared book is no longer obligatory, may account for this deficiency.

MATHEMATICAL SECTION.—The practical questions in *Geometry* involving only drawing were often well done by *Preliminary* candidates who had no knowledge or understanding of the theoretical questions. Sufficient attention was not paid to the direction, "all the construction lines must be shown clearly." There was much carelessness in reading off an obtuse angle from the protractor; the supplementary angle was frequently given. Very few candidates could find by drawing the length of the diagonal of a cube. The riders were not often attempted.

At many centres among *Junior* candidates there seemed to be a tendency to revert to the old verbose style, while at others the opposite extreme was reached, and instead of giving clear reasons for statements candidates would use an objectionable kind of shorthand. In the advanced part of the July paper very few successful attempts at riders were made, and in the practical question some ingenious but erroneous construction was often devised to account for the result. In December the bulk of the marks for the advanced part of the paper were obtained on two pieces of practical work. Most of the candidates failed to show adequate knowledge of simple properties of the circle and were ignorant of the meaning of a circle touching a line.

Many *Senior* candidates made mistakes in applying the method of superposition, and comparatively few appreciated the nature of a hypothetical construction. A large number appeared to believe that two triangles, if equiangular, were *ipso facto* congruent, and not merely similar. The congruence of two triangles in the "ambiguous case" was commonly assumed. The graphical constructions were neatly done, but much time was wasted (particularly by the girls) in drawing figures and writing out enunciations without sending in any attempt at a proof, and also in giving proofs which applied only to particular cases.

The *Algebra* answers of *Preliminary* candidates showed that the use of algebraical symbols to repre-

sent statements expressed in words had not received enough attention and showed great weakness. Mistakes were frequently made in dealing with brackets and fractions. The simple problem was generally attempted with success, but few correct answers were shown up for the harder problem. The graphical question was, on the whole, well done by the boys, though, in many cases, they neglected to state the scale to which the figure was drawn. Graphical work seemed to have been almost neglected by the girls.

The elementary work of *Junior* candidates was on the whole well done, though faulty manipulation of signs was not uncommon. A quadratic equation with irrational roots again proved a stumbling-block. Elementary problems were generally well done. Questions on indices and logarithms were badly done, except at a few centres; many candidates could work mechanically with fractional and negative indices without any knowledge of the meanings of the symbols used. Graphs were usually well drawn, but the use of intersecting curves in the solution of equations was not generally understood. In the advanced part of the papers the work was disappointing. Few candidates could solve correctly a pair of simultaneous equations, one of which was quadratic, and very few showed that they knew how to group their solutions. The work on literal equations showed no improvement. Questions on variation were scarcely attempted. The bookwork and formulæ connected with arithmetical progression were well known, but there was ample evidence that as a rule nothing but the memory had been trained when this branch of the subject was learned. The impression was given that little notice had been taken of the changes in the syllabus.

Calculations by means of logarithms were often faulty, and the principles involved in such calculations were imperfectly understood by many *Senior* candidates. Many quite good sets of answers were sent up at both examinations, and of these a fair number showed some knowledge of elementary differentiation. The question on integration (set in December only) was answered by comparatively few candidates, but a large proportion of the solutions were correct.

NATURAL SCIENCES SECTION.—In July very few *Junior* candidates taking *Theoretical Chemistry* remembered that the equivalent of iron has different values according as it is determined by oxidation or by the displacement of hydrogen. There was a general confusion between the action of water and of air upon iron, and the reactions between mercury and nitric and sulphuric acids were generally not known. The proof of the chemical nature of the reaction between water and quicklime was usually weak. In December most of the candidates were content with a statement as to the differences between a compound and an element and as to the nature of a chemical compound; they were not clear either as to the distinction being experimental or as to the use of the balance in fundamental problems. Many candidates were able to state correctly the law of the combination of gases, but very few gave a clear account of the experimental evidence.

The experimental treatment of *Heat* by *Junior* can-

didates seemed to have been rather inadequate, and very crude methods for finding coefficients of expansions were given. Methods of development of heat were, in most cases, confused with methods of transmission of heat. Answers to questions on the gas thermometer, and on the mechanical equivalent of heat, indicated that these subjects were, as a rule, beyond the scope of the average candidate.

Surprisingly few of the *Senior* candidates were able to trace the connection between the coefficient of expansion of a substance and its change of density with temperature, and the questions on the measurement of temperature and on radiant heat were a stumbling-block to many. The answers generally seemed to show that in many cases, while the candidates had some verbal acquaintance with the subject, they had no real understanding of the principles involved.

The work of *Junior* candidates in *Botany* was of fair quality, many of the answers to the December paper being good. Candidates' sketches and drawings have improved in some respects, but many of the representations of a longitudinal section through a simple flower were worthless and showed a lack of training. A large number of candidates were very careless in their interpretation and use of botanical terms. The term flower was very often taken to mean a complete flowering plant, and the terms bract and stipule were employed indiscriminately. Simple physiological experiments were usually well described, though many candidates omitted to mention precautions necessary for the success of the experiments. Candidates' knowledge of floral biology is still in a backward condition.

The average merit of the *Senior* answers was not unsatisfactory, but really good papers were rare. Answers were too seldom illustrated by diagrams, notwithstanding the instruction at the head of the question papers; when diagrams were drawn, they were frequently too small. A considerable number of candidates failed to answer the questions as set, describing, for instance, a whole specimen when asked to describe a single flower, or *vice versa*. In general it was evident that they had not received adequate instruction in making floral diagrams and drawing longitudinal sections of flowers. Descriptions of the apple were usually meagre and conventional, and even when such points as the remains of styles and stamens were mentioned, the drawings rarely gave evidence that they had really been distinguished. Many candidates did not appear to have a clear conception of the nature of cotyledons and endosperm. The answers to physiological questions were disappointing. The experiments described were frequently useless, either because they were unworkable or for lack of adequate precautions. The comprehension of the nature and significance of respiration was particularly inadequate: only a small proportion of the candidates realised the necessity of conducting experiments on the respiration of green shoots in the dark, and only a very few distinguished between the processes of respiration and assimilation and the exchange of gases accompanying them. Only a minority gave evidence of much personal observation of vegetation.

HISTORY AND CURRENT EVENTS.

UNTIL the outbreak of the present war "piracy" might be defined as of two kinds. One was the action of private individuals who committed acts of hostility at sea against merchant ships of any nationality; they were just robbers, and on occasion murderers, and they were summarily treated by any who could defeat them. Boys' books are full of the adventures of such "heroes." The other kind of piracy was that which was carried on by half-civilised States such as Barbary or Turkey. This was also largely the work of individuals, but it was necessary for the civilised Powers to proceed against the offending State if such piracy was to be, as it was in the end, suppressed. Opposed to "piracy" was the lawful capture of enemy ships, or goods, by the armed cruisers of a belligerent, or by privateers duly authorised. Much may be found in the text-books on international law as to rules concerning such capture, the necessary formalities of prize courts, etc. But if, as in the present war, one belligerent cannot take into its own ports the enemy ship, what should be done? That question has never yet arisen, and hence the sinking of such ships and the charge of piracy, which must be settled by a conference when this war is over.

WE are all familiar with the diplomatic history of last July and August, and with the rapidity with which a quarrel between Austria and Serbia became a world-wide conflagration. But the discussion still continues as to the origin of the war between Britain and Germany, and we here are tempted to think of that phase of the war as the most important, especially as our attention has been directed to certain books published in Germany within the last few years. Who, then, is Germany's principal foe? Is it Britain or Russia? Against whom were those armies launched westwards, against France only or against Britain? As a help towards answering these questions we may recall certain personal remembrances of a visit to Germany some twenty-six years ago. We attended church regularly, and generally found the building almost empty, but on September 2nd, the anniversary of "Sedan," we found it crowded with men, and the subject of the sermon was the victory which God had given to German arms on that day "because they held '*die Evangelische Glaube*.'"

WE remarked then that the religion of Germany was, under the outward forms of Christianity, a national faith which might almost be called "Germanism." Certainly their almost divine heroes were the Emperor William, Moltke, and Bismarck, all three then alive, and Bismarck still Chancellor. The enemy seemed to be France, but there was a private incident which indicated other thoughts. A twelve-year-old lad whose acquaintance we made told us one day that he hated England, and when asked why replied, "Because she is so greedy." His mother reproved him for the thought, saying that when she wanted a specially good dress she had it made of English cloth. That mother is probably now dead

and the boy is now a man of nearly forty years of age. Is he one of those who sing the "Hymn of Hate," and think of the war as directed mainly against the sea-power that blocks the way to the Germanisation of the world? Was the attack on France by way of Belgium directed intentionally against the Power whose policy these six hundred years has been alliance with the Netherlands?

WHATEVER the answers to these questions, the neutrality of Belgium has been violated, and almost the whole country conquered and terribly devastated. Readers of these columns may have learned that, if we have had any bias at all, it has been in favour of peace among the nations. We have hailed any progress towards mutual understanding and towards the adoption of arbitration for the settlement of international differences, and despite the hints we received so long ago, as indicated in the immediately preceding paragraphs, we must confess that we were of those who were profoundly disappointed when this war broke out. It has set us thinking, like so many others, of the divine government of the world, and we have naturally turned to some of the greatest writings on that subject, those which are to be found in the Old Testament. Our readers doubtless know those poems on Israel as the Servant of JHVH, which have been embedded in the book of Isaiah and have been adapted in the minds of Christians to the person of Jesus Christ. If they will read those poems, they will find many phrases originally intended for Israel in the depths of the exile period which wonderfully suit the present circumstances of Belgium and the part she has played in this tragedy of the nations.

ITEMS OF INTEREST.

GENERAL.

AT the meeting of the British Association to be held at Manchester from September 7th to 11th next, the Educational Science Section will be presided over by Mrs. Henry Sidgwick, formerly principal of Newnham College, Cambridge.

A CONFERENCE of teachers of history will be held at Stratford-upon-Avon during the first two weeks of August, in connection with the Summer Shakespeare Festival. The organisation is carried out under the auspices of the governors of the Shakespeare Memorial, who, in arranging the programme of the Shakespeare Festival, will give special consideration to the interests of the members of the conference. The meetings of the conference will take place in the Grammar School of King Edward VI. The meetings will be held from 10 a.m. to 12.30 p.m. on Monday, Tuesday, Wednesday, Friday, and Saturday of each week. Arrangements will be made for members to visit, on the Thursdays, places of historic interest in Warwickshire. The subjects selected for discussion in the first week are:—"The Relations of History and Literature," Mr. J. H. Fowler; "Laboratory Work in English History, and the Use of Original Sources," Mr. W. Keatinge; "The Teaching of Social and Economic History," Miss E. H. Spalding; "Hand-

work and Modelling in Connection with History Teaching," Mr. F. G. Snowball; "The Study of Mediæval History," Mr. G. G. Coulton; and "Dramatic Methods in History Teaching," Miss H. M. Cam. During the second week the following subjects will be discussed:—"The Teaching of Current History," "The Study of Civics in School," "The Study of Local History," Dr. J. E. Morris; "Shakespeare's Historical Plays in School," Mrs. Foster Watson; and "Story-telling in connection with History Teaching," Miss C. Linklater Thomson. All communications should be addressed to Miss D. M. Macardle, hon. secretary, Conference of Teachers of History, Shakespeare Memorial Theatre, Stratford-upon-Avon.

THE Education Committee of the County Council of the West Riding of Yorkshire has arranged a summer vacation course for teachers, to be held at Bingley Training College from August 4th to 18th next. A general course will be provided, including a course on education, with Prof. John Adams as lecturer; the teaching of reading and speaking, lecturer, Mr. Arthur Burrell; the teaching of English, Mr. Hardress O'Grady; the teaching of modern languages, Miss L. H. Althaus; the teaching of music in schools, Dr. J. E. Borland; the teaching of informal domestic work in schools, Miss G. E. Irons; and teaching in infant schools, L. L. Plaisted. There will also be special courses as follows:—The teaching of handwork, Miss I. Suddards; nature-study—animal life, Prof. W. Garstang, plant life, Dr. O. V. Darbishire; the teaching of needlecraft, Miss M. Swanson; and physical instruction, Mr. A. H. Whitehead. Several evening lectures on popular subjects have also been arranged. The primary object of the courses is to increase the educational spirit and efficiency of persons teaching in the West Riding, and to enable them to supplement their knowledge of the various subjects, and of the most approved methods of teaching them. It is not intended that the courses should in any way be regarded as affording adequate training for persons desiring to enter the teaching profession, and they are not to be regarded merely as a means of obtaining certificates of proficiency. Applications for admission to the course should be made to the Education Department (Secondary Branch), County Hall, Wakefield.

ON Friday, May 21st, at 8 p.m., Dr. Kimmins will lecture for the Montessori Society on the results obtained in the infant school at Sway, in Hampshire, into which the use of the Montessori material and method was introduced as far back as 1912. With these results Dr. Kimmins has made himself acquainted by a personal inspection, and in this inspection he made use of the norms drawn up by Dr. Ballard and explained by him at the recent meeting of the Society of Education. The meeting is one of the series which has been held by the Montessori Society this session, but as it is believed that many who have not joined the society will want to hear this lecture, arrangements will be made for a large hall, and tickets will be sent to any person forwarding 6d. per ticket, together with a stamped addressed envelope to the honorary treasurer of the Montessori

Society, Dr. Jessie White, 49 Gordon Mansions, W.C., before May 19th.

THE Uplands Summer School is to be held from August 7th to 28th at Chalice Well, Glastonbury, Somerset. "Uplands" is the name selected for an effort designed to bring together teachers engaged in many fields who have common interests in the study of educational principles and the reform of school teaching. The chairman of the committee is Prof. J. J. Findlay, who, with Prof. Shelley and Dr. J. W. Slaughter, will give the principal lecture courses. There will also be a series of demonstration lessons, and in the afternoon courses will be taken in nature study, domestic crafts, dramatics and eurhythmics. The prospectus can be obtained from the secretary, Miss A. F. Purvis, Darbishire House, Upper Brook Street, Manchester.

A TEACHER who intends to specialise in geography would be well advised to take the diploma in geography of the University of Oxford. The annual report of the Oxford School of Geography for last year gives details of the courses followed by the candidates. More than a hundred lectures were given by Prof. A. J. Herbertson and his staff upon a very wide range of geographical subjects; in addition special lectures were given by distinguished geographers and explorers, among whom were Prof. T. Edgeworth David, Dr. W. S. Bruce, and Sir Ernest Shackleton. Weekly during each term seminars were held by the professor or the assistant to the Reader in Geography for the discussion of standard or recent geographical literature. Several field excursions were held each term. Students were also required to write periodical essays for the Reader and other members of the staff. Additional arrangements were made for those students who took the certificate in surveying; these included a field course during the month of July. The School of Geography possesses an extensive equipment of books, atlases, etc., including 12,000 sheets of maps. During the year the additions to the collection included more than a thousand books, pamphlets, etc., 739 sheets of maps, and 219 lantern slides and photographs.

THE executive committee of the Moral Education League offers a prize of £20, and several prizes of smaller amounts, for the best essays on the following subject: "The Reform of Moral and Civic Education: Present-day Difficulties and Suggestions for meeting them." The competition is open to all teachers in elementary schools in the British Isles. The committee will gladly receive essays by persons other than such teachers, but these will not in any circumstances carry prizes. Essays must be at least 10,000 words in length, and must be typed, or written in a legible round hand. They must give evidence of adequate knowledge of the literature published in English on the subject. Essays must be received at the offices of the League in September, 1916, and the award of the judges will be made public in December, 1916. The essay awarded first place will probably be published by the League, with the competitor's name attached, and with or without passages from other

essays. If this is done, the author will receive a royalty on sales. Intending competitors are invited to send to the Secretary of the League (6, York Buildings, Adelphi, London, W.C.) for further information, enclosing a stamped addressed envelope (folded foolscap size). Full particulars, list of books, etc., will then be sent.

THE extreme rarity of fatal accidents in connection with the games and athletic exercises which have so large a share in the life of the average schoolboy causes a distinct feeling of shock to attend the announcement of such a catastrophe as that recently chronicled in connection with a school race at Sherborne. In the reader's mind there arise at once the questions: "How did such a terrible thing happen—and why?" to be followed, in most cases, by the half-formed query, "What precaution was omitted or overlooked to make it possible?" The first two questions are legitimate, and the third—if scarcely charitable when put in such a form—is not unnatural. In the absence of those details which are essential to a considered judgment, mere speculation regarding the present instance is unprofitable. But something may be gained by a brief review of the questions which it raises in the light of such knowledge as we do possess.

JUST half a dozen years ago the whole question of the risks involved by the more strenuous forms of athletics practised by schoolboys was raised in an acute form by the publication of a series of complaints involving serious charges against the methods alleged to be in vogue in almost all the large schools of this country. The matter was very fully discussed at a meeting convened for that purpose by the Medical Officers of Schools Association in London (*vide* "School Athletics and Boys' Races"; Churchill, 1s.). Three main points emerged therefrom: an absence of detailed and authoritative evidence in support of the charges which had been too recklessly disseminated; a large volume of detailed evidence showing the exaggerated character of the charges made, and describing the precautions taken to avoid the risk of accidents, corroborated by the opinions expressed by several eminent members of the scholastic and medical professions; and, finally, a list of those precautions advised by the association in connection with the various forms of school athletics.

It is scarcely possible for any unbiassed person to rise from a perusal of the pamphlet which records the proceedings of that gathering without a feeling of reassurance. Given the most elaborate precautions and the most careful supervision, some accidents are, humanly speaking, unforeseeable and inevitable, though, none the less, most keenly to be regretted. But we may still believe that, in proportion as the rule and precautions laid down as "most necessary" are observed, it is reasonable to hold that the risk attending strenuous sport in our schools is "reduced to an insignificant minimum." The extreme rarity of those exceptional accidents which we deplore constitutes some evidence that our confidence is well founded.

SINCE 1909 the Board of Education has been making a special grant to the West Riding Education Committee in aid of an experiment in rural secondary education conducted at King James's Grammar School, Knaresborough, and the first report on this experiment has just been published by the Board. This report (Educational Pamphlets, No. 29) sketches the history of the developments at Knaresborough from the re-opening of the school as a rural secondary school in October, 1908, to July, 1912. After some introductory remarks, which give, *inter alia*, an idea of the situation of the school and its surroundings, illustrated by a map, the buildings are described in some detail, and an account of the fees charged and of the growth of the numbers in the school is added. Next follows a full account of the curriculum, which seems modelled in almost every detail upon that adopted in similar experiments initiated at Shepton Mallet Grammar School and at Sexey's School, Blackford, Somerset, so long ago as 1897, except that a foreign language has been excluded. (For an account of the successful working of the former of these experiments we would refer our readers to our issue of August, 1908, vol. x., p. 287.) The omission of all language teaching except English seems to have led to difficulties, the nature of which is outlined. Details of the organisation of the work and a copy of the time-table follow, together with particulars of the after-school occupations of the pupils and the finance of the scheme. The "Conclusions" arrived at, so far as they go, in no way differ from, but add nothing to, those of the earlier experimenters. The pamphlet should be studied by all who are interested in rural secondary education, but it may be suggested that a similar account of the developments of the previous experiments to which we have referred would be even more useful and convincing.

School Science and Mathematics (April, 1915), vol. xv., No. 4, contains an interesting article on "Recreations in Secondary Mathematics"; it includes a short history of the subject, numerous suggestions of suitable topics for the class-room, and an extensive bibliography. The concluding portion of a contribution on "Technical Points on Gems" gives information of special interest to physicists; the main points are extracted from a series of papers on precious stones published in the *Jeweler's Circular* (New York). Several other articles, and the "Problem Department," deserve the attention of teachers.

SCOTTISH.

THE thirteenth annual report of the Carnegie Trust presents no new feature of special interest, but on every page bears record of the immense value to the Scottish universities of its benefactions. During the past year £40,000 has been allocated for buildings, equipment, and the endowment of lectureships. If any criticism has to be offered on the distribution of the funds it is that the importance of buildings has bulked so largely in the minds of the trustees that they have almost forgotten that it is the teachers who make a university and not stone and lime. The position of the assistants and lecturers in Scottish univer-

sities does not reflect much credit on the authorities. They have inadequate salaries, no pension scheme, and no security of tenure. Many of them have given a lifetime of distinguished service to the universities, and after it all have no more say in their councils than the college janitors. The greatest service the Carnegie Trust could do would be to tackle this problem and secure for the members of the junior staff conditions of service worthy of their high reputation. It is satisfactory to find that £606 has been voluntarily refunded by past beneficiaries of the trust. This is the largest sum hitherto received from this source in one year.

THE Leaving Certificate Examinations for 1915 have come and gone, and it is hoped that never again will they be conducted in circumstances so distracting and trying to all concerned. There was no possibility of keeping the general spirit of unrest and anxiety out of the schoolroom, and, indeed, it would have been little to the credit of either teacher or pupils had the great happenings of the time been without their effect on the schools. In addition, many schools have suffered severely from changes in the staff, some having as many as six teachers away on Imperial Service. The vacancies have been filled up *aussi bien que mal*, and the work has progressed with good will if not with the usual effectiveness.

THE examination papers this year appear to have been framed not by ordinary mortals, but by inhabitants of Mars. Not even in the history papers is there the faintest echo of the great struggle upon which the nation is engaged. The English Board of Education at the beginning of the session issued an admirable circular on history teaching in secondary schools, recommending the special study of the nineteenth century in order that the pupils should have an intelligent grasp of the events leading up to the great war. The Scotch Education Department seems to think that work should progress on old lines, and that the youth of Scotland should keep their eyes rigidly closed to the momentous events of the present and everything leading up to them. The other papers do not call for much detailed criticism. They were all on the old well-worn lines, and satisfactory on the whole save in French. The passage for reproduction in lower French was quite unsuited to the capacity of the pupils. It was a disquisition rather than a story, and the language was both involved and difficult. The higher paper was quite impossible, and strengthens the plea for a court of summary justice for incompetent examiners. The Latin papers were models in their way, and quite within the capacity of the average pupil.

MOST of the secondary schools are at present engaged in preparing rolls of honour of their old pupils now on war service. Some contend that this is but another example of the national commercial spirit with its worship of the twin gods—competition and advertisement. But those who make this charge know little of the present temper of our schools, which is of a high seriousness and purged of all baser motives. The formation of these rolls is

an act of homage, not of rivalry. It represents the tribute of admiration and gratitude gladly paid by the present pupils to their predecessors on the school benches. Perhaps the best justification for the movement is the pride with which the lists are regarded by the old pupils themselves. "Be sure to forward the roll of honour when it is published," is a frequent request from the trenches, and surely anything that makes our brave fellows feel that their devotion and self-sacrifice are appreciated is entirely to be commended.

THE Department's memorandum on the staffing of schools during the war has called forth a storm of criticism. On one hand objection is taken to the action of the Department in framing new conditions of service without consulting those directly affected. Dockers, engineers, miners, doctors, are to be consulted as to emergency arrangements affecting their trade and profession, but the teachers are "a weak folk," and must do as they are told. The other ground on which the Department is strongly assailed is its action in making the rural school bear the whole burden of the situation. These schools may be staffed by anyone approved by the inspector, but the town school must still have its certificated teachers who can apparently be obtained by withdrawing them from the poor rural schools. "Truly to him that hath shall be given." But what about the boasted "equality of opportunity for all children in Scotland"? It was never anything but a catch-phrase, but never has its hollowness been so unblushingly proclaimed as in this latest circular of the Department.

IRISH.

THE teachers' salary grant of £40,000 for the school year 1913-14 was distributed among the schools at the end of March. This considerable boon, the subject of so much discussion and agitation, is therefore at last a substantial fact. The money has been apportioned among managers of intermediate schools in proportion to the intermediate school grant for last year, and amounts to about ten-thirteenths of it, that is to say, for every thirteen pounds received as intermediate grant each manager receives in addition another ten pounds, but, whereas there is no restriction on the expenditure of the intermediate grant, the teachers' salary grant is controlled by a special Act of Parliament. The latter, however, has been paid this year to the schools without any definite conditions; the intermediate office has acted merely as a distributing medium, and the Government has not sent round at present any regulations for its control. One may hope that when the Government has decided on the conditions which the schools must observe it will hand over the management of the fund to the Intermediate Board. Irish schools have already to serve two Government authorities, the Intermediate Board and the Department. The addition of a third, viz., the Castle, is to be deprecated as unwise and unnecessary. The Government has, however, an important piece of work to carry through under the Act in forming a teachers' register for intermediate schools, and this should be well advanced during this present year.

At the spring graduation of the Queen's University, Belfast, held just before Easter the vice-chancellor, the Rev. Dr. Hamilton, made a statement showing how the University had been affected by the war. The number of men presenting for degrees was smaller than usual for two reasons: First, many of the senior students had left the University to take up work in connection with the war. In all there were close upon five hundred members of the University who had joined various branches of the Service, the Royal Engineers, the R.A.M.C., the Royal Navy, and others. The other reason was that a special graduation ceremony had been held in January to confer medical degrees on twenty male students and one lady student. Nevertheless, including nine more receiving their degrees that day this made a total of thirty medical degrees as compared with fifteen last spring. The vice-chancellor further pointed out the growing need of more men entering the medical profession, which in the near future is likely to be seriously deficient in numbers for the needs of the Empire.

AN interesting conferring of degrees also took place in the National University, Dublin, just before Easter, in accordance with the following resolution of the Senate: "The following having during their student days, for conscientious reasons, refrained from attending institutions where they could have obtained university degrees, and in place thereof having resorted to the Catholic University which was unable to grant them that privilege, were awarded honorary degrees by the National University of Ireland, whose institution to some considerable extent was due to their action in the past." Degrees were, of course, not conferred upon all the ex-students of the Catholic University, but only on the most distinguished among them; twenty-six received the honorary LL.D., and nineteen the honorary M.D. degree.

WELSH.

THE annual summer school of the Welsh Language Society will be held in August as usual. Unfortunately the meeting of the committee of the National Eisteddfod is earlier than was originally intended, and falls within the first week of the course. It is intended to suspend the course for a day in order to enable the members to visit the Eisteddfod either for the "Chairing" or the "Chief Choral Competition." The work of the summer school is to be divided into four sections—method, grammar, history, and literature. Sir Isambard Owen, vice-president of the society, is to be asked to deliver the inaugural address, and Mr. E. R. Davies, secretary to the Carnarvon County Education Committee, an address on Pwllheli and its neighbourhood.

A DETERMINED effort is to be made to remove some of the special disabilities under which assistant-masters and mistresses in Welsh intermediate schools suffer—disabilities of which education authorities are blissfully unaware. Not only are Welsh salaries considerably lower than English on the average, but Welsh secondary-school teachers are denied their share

of representation and of opportunity of making themselves heard. The certificated teachers in Welsh elementary schools are directly represented on the Central Welsh Board for Intermediate Education, and on the governing bodies of the university and its constituent colleges. This is as it should be; but assistants in secondary schools have at least as good a claim; their opinion is at least as valuable, and they are more directly affected by the doings of these bodies, one of which examines their pupils and inspects their work, while the others receive many of their pupils at the end of their school life.

It may be contended that representation by the head of secondary schools is sufficient. But apart from the fact that the head's point of view is not always that of the assistants, who, after all, do most of the actual work of the schools, a large and valuable body of opinion is left unrepresented, for the heads who represent secondary schools, unlike the representatives of elementary schools, are elected by heads only. While it is right that elementary education should be allowed to influence the higher branches, it is right that secondary-school teachers should have a place on local committees dealing with elementary and other forms of education. The fear that they might be voting on their own salaries is a bogey easily laid; they might be specially deprived of the power of so voting, or they might be put on the committees of neighbouring areas, but not on those of their own; it is beyond doubt that their inclusion would be to the advantage of education, and of the ratepayers as well—and some teachers *are* ratepayers! We must not omit to mention that the assistants in North Wales intermediate schools already elect their own representatives on the Court of Governors of Bangor University College.

THE covering letter accompanying the Board of Education's circular on examinations when sent to Welsh schools asks education authorities and head teachers to discuss it, but makes no mention of assistant teachers. This is a serious omission, which we hope to see remedied. The Central Welsh Board is convening a meeting of persons and bodies interested, to consider the circular as it affects Wales; it is intended to meet in May at Llandrindod.

THE financial needs of higher education in Wales have received much attention of late. Apart from the stress caused by the war, it was found that the provision available was not adequate for the work that was being done; representations to the Treasury were met by the intimation that grants might be reduced, but special allowances might be made to replace the losses caused by the war. Suggestions were made that overlapping might be avoided by co-ordinating the work of the colleges and duplication of teaching eliminated by giving to the work of each college a special character. A meeting of representatives of the University held in London on March 20th considered these matters and adjourned until April 16th for the obtaining of further information and more fully ascertaining the views of the Treasury,

whose continued interest in the Welsh colleges was appreciatively acknowledged. It is understood that the Treasury has offered to set up a Royal Commission to consider the position and the future of higher education in Wales; Cardiff College has accepted the suggestion, but Aberystwyth is less inclined to accept it, and Bangor would like to decline.

WAR ANTHOLOGIES.

"He saith among the trumpets Ha, ha: and he smelleth the battle afar off, the thunder of the captains, and the shouting."—JOB 39. 25.

THE anthologists smell the battles afar off: and in book after book they resemble the immortal war-horse of Job in their cry. Apart from this, the resemblance fails. Several books of war-poetry have been noticed in this magazine; but three typical volumes have lately reached the editors, and afford a good opportunity of a word on such orderlies of Bellona. The first is "Patriotic Poems for the Young," selected by Mr. G. B. Tait, a well-known educationist in a well-known northern city (192 pp., Chambers, 1s.). It is intended for the young, and may well be understood of them. On the whole, it contains its fair share of old friends: the Burial March of Dundee, the Incident of the French Camp, the Song of the Western Men, Barbara Frietchie, and the like: nor is Macaulay spurned; but a fair number of copyright pieces are included. There is no doubt about the note of the book: it is patriotic verse all through, and not always that of Britain nor of her Allies. On the cover stands a Boy Scout.

The second book is "English Patriotic Poetry," selected by L. G. Salt (89 pp., Pitt Press, 6d.). Miss Salt tries to treat the subject historically, and we begin with Spenser, continue with Shakespeare, take in Cowper, and end with Rudyard Kipling. Tennyson supplies six, Wordsworth five, and Campbell three extracts. Apparently there is nothing patriotic (and English) before "Colin Clout's come home again." The chronological arrangement is singular, and it is not clear in this volume (which lacks its introduction) what we are to gather from the "growth of patriotic poetry." It is almost unnecessary to say that the choice of extracts is admirable. But the inwardness of the words in the preface is dark: "The growing importance of such celebrations as are now held in our schools on Empire Day seemed to emphasise the need for an anthology of this sort." The date of this is 1910; can it be that patriotic anthologies are but children born after the Boer war?

The third volume is entitled "Poems for the Children," and on the cover (an unusual place) are the words, "City of Bradford Education Committee." The compilation is done by Mr. Coffin, the Director of Education, with the help of many friends; the preface, a singular production containing an idea that is glanced at and left, may have been written by all of the friends. This preface is much too short, and is entirely above the children's heads. This is a pity, for the root-idea in it is exactly needed by, and quite receivable by children. The selection is most remarkable. Three admirably chosen and well translated "jewels five words long" come from *Anth. Pal.* vii., given without a word of comment on the best writers of epicidia that literature has ever known. Mr. Thomas Hardy, Mr. Noyes, Mr. Drinkwater, Sir Henry Newbolt, Sir Rennell Rodd, Mr. Galsworthy and Mr. Masfield, and, of course, Mr. Kipling, have allowed extracts from their writings. Of the thirty-one pieces perhaps quite half are within

the child's grasp. No price is mentioned, but the booklet is fine in size and paper and print: its cover, which curls at sight, is unsatisfactory. But the whole attempt is a treasure for men and women, and the authors as well as the selectors are greatly to be thanked.

Now these three little books suggest thought. Patriotism, in its best sense, is not only a golden mean, but a golden mixture. As a mixture it is a cluster of pillars on five bases: a sacramental love of country, an individual hatred of interference, a love of a fight, a panic movement, and a sense of duty (disliked, but undertaken). Morally, it is clanism and self-protection; and until man has emerged from a national to an international and world stage it will be an accompaniment of world-changes: "War," said the Greeks, "is the mother of all things." In its dim beginnings you can meet it in an omnibus, a house-match, a village squabble: it takes on Protean forms of the noble and ignoble. As a golden mean it is situate between jingoism and indifference to country, between Teutophobia and pacifism, between frightfulness and timidity, between wild screeching and solitudinarianism (the word is Thackeray's), and between the high Wordsworthian Duty and duty disavowed and neglected. But it is a mean, and in nothing are people so much in need of the re-reading of the "Ethics" and Pericles' speech as in this.

You may therefore build your war anthology on any one of the five pedestals, and you may so very easily fall in your choice of extracts into the extremes. The interesting question for an educational magazine is this: What is best, in time of peace or in time of national crisis, on which to feed the growing citizen? Certainly not panic, nor extreme loathing of any particular country, nor praise of mere "red gluttony"; but cool-headedness, hatred of war-lust and excessive barbarism, supreme self-sacrifice at the "one clear call," and unity until the end is accomplished. To some of these, though ill-prepared, this country has, haltingly, risen; but it has risen, and this is our main cause of any self-gratulation. The war, even without the paltry lucifer or Lucifer that kindled it, was, all historians agree, inevitable: but it is our business to teach children to face the inevitable *with a clear conscience*. This is the basal teaching on which poems should be selected.

It follows, as a corollary (which seems to escape the anthologists), that among books from which selections might be taken are the following: the Book of Psalms and the books of the Maccabees, the Greek anthology, the poems of Horace, the wonderful burst of German poetry during the Napoleonic era, the verse of the Cromwellian era, the poetry of persecution in all ages, and, of course, our own rich granary. Most of the verse literature connected with the names of Homer, Virgil, the Crusades, Crecy, Napoleon, is, from the basal point of view, tainted; and apart from individual deeds of supreme worthiness should be shunned. Marathon and Jena, Platea and Namur, Mukden and Magdeburg, as victories, are worlds apart: they do not belong to the same categories of things. Individual self-sacrifice, prowess, contempt of death, is fine, in whatever cause life is laid down; but distinction must be made between the fighter and the causes of the fighting.

Thus no ideal war or patriotic anthology can, it seems to us, neglect Babylon, or Ireland, or Silesia, or Simonides, or Aeschylus, or even Victor Hugo; but Shakespeare has to be treated with caution. When, however, we turn to the love of the Fatherland or Motherland, such caution is greatly relieved of its trammels, and this is why the quotations from *Anth. Pal.* in one of our books might

have been greatly extended. At present, owing to a doubt in the many editors' minds regarding their public and their own object, our anthologies contain too much—and too little. It is significant that Blake's noble verses, "Prepare, prepare," are very rarely printed; and it is a pity that so little stress is laid on the sufferings of the innocent. It is the living, not the dead, who bear the brunt of war; for the living, even apart from unspeakable horrors, have to face the lifelong loss of old familiar faces.

To descend to an important detail, it seems a pity that scholars and poets should not, at a time like this, turn their attention to translation. The great master of Balliol wisely advised a prince among translators, John Addington Symonds, to translate: for your true translator is a *rara avis in terris*, and much rarer than your true poet. Great patriotic poetry based on the noblest motives is still in its national stage; the translator might advance it to the international, and so be a prime agent in helping on the possible coming of a world-peace which, except for noble motives, might not be disturbed. As yet the nations understand one another's position just as well as two suburban academies do, who never meet without fighting.

THE APOCRYPHA.

The Books of the Apocrypha: their Origin, Teaching, and Contents. By the Rev. W. O. E. Oesterley. xiv+554 pp. (London: Scott, Paternoster Row.) 10s. net.

THIS book meets a long-felt want, and it is a piece of work excellently done. Rather more than half the work is Prolegomena, the rest discusses the several books of the Apocrypha. Beginning with Hellenism, its influence on the Jews within and without Palestine, it passes to Greek influence in the Old Testament and the Apocrypha, and the Apocalyptic movement. Other chapters deal with the Scribes, Pharisees, and Sadducees, the Old Testament canon, the uncanonical books, the Wisdom literature, and the doctrinal teaching of the Apocrypha. Each chapter has at the end a brief summary of its contents.

Hellenism has been treated in many books, and of late years the study has been enlivened by the discovery of inscriptions and papyri; but as a rule books are written from the Gentile point of view. Dr. Oesterley's study has, therefore, a new point of view, and that which is most important for the student of the Scriptures. As our brief summary will show, there is matter here for everyone who reads the Bible, and especially for the thousands who have to teach it in one form or another. The doctrines of the Pharisees and Sadducees, for instance, are generally dismissed in a note, but every teacher must have felt the need for more knowledge of these. What is said, again, of the Apocalyptic and Wisdom literature will be new to most people, and it is full of instruction.

The analysis of the separate books gives all that is necessary for this criticism; and it is to be hoped that many may be induced to read them, to whom they are now no more than names. The books of the Maccabees, besides being historical documents of value, are highly attractive for their story; the first at least were written probably by an eye-witness of some of the events therein described. It was a great struggle for freedom, which must awaken our sympathy to-day. Each of the others has its own interest, even if it be but that of a quaint legend.

The chapters begin with a short list of important works, and there are full indices.

RECENT SCHOOL BOOKS AND APPARATUS.

Modern Languages.

Passages for Translation into French and German. Selected by G. G. Nicholson and C. J. Brennan. 348 pp. (Oxford University Press.) 3s. 6d.—The compilers of this volume, both on the staff of the University of Sydney, state that two principles have governed the selection of these passages:—(1) That however important width of vocabulary may be, a knowledge of the constructions of a foreign language is still more essential; and (2) that translation should, as far as possible, take the character of an application of knowledge acquired in speaking and reading the foreign language. The 220 passages are representative of many styles, for they are drawn from close on one hundred authors; and they are intrinsically interesting. They seem well suited for university students. No notes are appended, and it is announced that no keys will be published.

The Children's Entente Cordiale. By L. M. Oyler. 44 pp. (Jack.) 1s. net.—Amusingly illustrated by George Morrow, the *Punch* artist, this picture book about French and English children looks attractive enough. Unfortunately the mixture of English and French, while it may teach some French words, will be fatal to the pronunciation. The child who reads:

"Que voulez-vous, May, des cerises?
What will you have; some cherries, May?
Or pineapple? I've cut a piece,
It's very fresh, c'est bien frais,"

will try to make *cerises* rhyme with "piece," and *frais* with "May," and will read the first line with the same stressing as the third. The English basis of articulation will prevail, and the result will be Anglo-French of the worst kind. We may mention some other rhymes found in this book: *mère* and "declare," *beau* and "know," *chêne* and "lane," *petites* and "heat," *cheval* and "shall."

De eerste Steppen om Engelsch te leeren. By T. W. Cox. 36 pp. (McDougall.) 6d. net.—This little book is primarily intended to help Belgian children who are now in England to overcome their first difficulties in learning to speak English. The English text and a Flemish rendering are on opposite pages, and many useful words and expressions can be learnt in this way. Some information is given with regard to the pronunciation of Flemish, but for English the learner is expected to rely on imitation. The author suggests that "the teacher should give the sound of each English word on the 'look-and-say' method." It would surely have been better to make some use of phonetics.

The French Romanticists, an Anthology of Verse and Prose. Selected and annotated by H. F. Stewart and A. Tilley. x+244 pp. (Cambridge University Press.) 4s. net.—The same authors published, in 1910, "The Romantic Movement in French Literature," in which they gave a brief but adequate account of the movement, with a valuable selection of extracts dealing with the theories of the Romanticists. They have now issued a companion volume which contains characteristic specimens of Romantic prose and verse. It is an admirable anthology, scholarly and helpful; and the editors have given just the annotation that is wanted and no more. We recommend the two volumes warmly to all who are interested in this fascinating period of French literature.

Classics.

A Short History of Classical Scholarship from the VI. Century B.C. to the Present Day. By Sir J. E. Sandys. With 26 illustrations. xvi+456 pp. (Cambridge University Press.) 7s. 6d. net.—This book has been made by omission of the less important paragraphs, and by some compression of the others, from Sir John Sandys's larger history in three volumes. It will be welcomed by the classical student, and, strange to say, the general reader will find a good deal of entertainment in it. We say strange, by way of compliment, for who would have expected a work like this to be readable? But it is. The illustrations come from the earlier work, except the portrait of Hemsterhuys; here a genuine portrait is substituted for a spurious one. The index contains details of the chief editions under each classical author.

Ancient Civilization: A Text-book for Secondary Schools. By Roscoe Ashley. xxiv+364 pp.; many plates and illustrations in text. (New York: Macmillan Co.) 5s. net.—This is the second book of its kind we have noticed in these columns within the last year or two. It seems to be a specially American type, compressing a vast deal of space and time into one volume; and the type is due, no doubt, to the American plan of education, by which students, and even children, may choose their own subjects, and follow them for a few months until they take up others. Mr. Ashley here includes not only ancient history, but anthropology, and his attention is given more to social life than to political. There is plenty of interest in the volume, but it is too sketchy to be of real value, especially for the very crude minds for which it seems to be meant. Pupils, or teachers either, who need the word Je-rú-sa-lem to be accented in order to help them to pronounce it will scarcely profit by the perusal of many learned works which he is recommended to read; e.g., the "Companion to Greek Studies," Tylor's "Anthropology," Zimmern's "Greek Commonwealth," and so forth. Lists of such books are found at the end of each chapter, side by side with examination questions on the chapter itself. The illustrations are good.

A History of the Ancient World from the Earliest Times to the Fall of Rome. By Hutton Webster. With 236 illustrations and 55 maps or plans. xxii+682 pp. (Harrap.) 6s. net.—Here is another of the universal histories which seem to be such favourites in America. Like the "History of Civilisation," it begins in the Stone Age, discusses the domestication of animals, the origin of the alphabet, prehistoric art, and lays stress on social and economic development. The information is given in pithy little paragraphs. It is quite amazing what a great deal is got into the volume, and it is quite readable: but here's the rub—is it as readable for the child as for the grown-up who already knows something of most of its subjects? We fear not. We think these summaries of knowledge are not useful for the purpose they aim at. On the other hand, we are glad to acknowledge that the book is attractive, and the illustrations very good. These are well chosen, and include the latest discoveries, such as the Phaistos disc; and a large number of them are new, such as we have not seen before in any book (e.g., p. 4, a cave dwelling of the Stone age, in section; p. 15, comparison of the beginnings of writing; p. 32, physical map of Asia, very instructive; p. 522, the growth of Christianity to the end of the fourth century).

The Year's Work in Classical Studies: 1914. Edited by Cyril Bailey. xii+188 pp. (Murray.) 2s. 6d. net.

—This indispensable work is now in its ninth year. The editor, in his preface, says that its form and contents have been modified, but we have not noticed much difference. More space is given to important books, and the less important are left out. Greek history and inscriptions now go together, Roman history and Latin inscriptions; Prof. Thumb takes modern Greek, and Miss Lamb takes Greek excavation. There is some overlapping still, which might call for the editor's attention; thus Mr. Thomson on Homer is twice discussed (pp. 115, 133), and Mr. Cornford on Comedy (pp. 113, 139). We hope never again to record a note like that on p. 27, that the work of all British scholars has been omitted for want of space. This book is not for the expert, and those who read it will probably not know the work thus omitted. The editor will do well to put his foot down on that spot.

English.

The Place-Names of England and Wales. By the Rev. J. B. Johnston. 532 pp. (Murray.) 15s. net.

—The learned writer's preface deprecates certain criticisms; but it would have been well if a slight scorn of all guesswork in this very debatable country could have been omitted, for the book itself is not free from guessing. The general reader, too, would have been grateful for a full statement of principles; sources have long been recognised. And the bibliography is surely too short; even Prof. Weekley, thanked in the preface, is not found among the useful authorities, nor, *mirabile dictu*, Domesday, which occurs, of course, in every page. The lists are introduced by sections on classical, Keltic, English, Scandinavian, Norman, and Welsh elements. This introduction, though long, we would gladly see longer; and more might have been given us on the work and results of Zachrisson, who has written on Anglo-Norman influence and on certain Norman speech difficulties (Salop from Shrewsbury being a violent instance). Uttoxeter, Carshalton, Marazion, supply very interesting notes; but nothing is said of Isleworth, Beamsley, Simon's Seat, Blubberhouses, all names which, one would have thought, might have yielded something surer than curious guesses, such as Lizard (louse-yard!). In time all such dictionaries may be gathered in the service of history and cartology, and the immense amount of romantic but entirely trustworthy information on place-names will be sifted and made accessible. At present it is distributed in twenty volumes and more. Occasionally the writer adds local pronunciations, e.g., Slaithwaite (which he gives as Slówat—surely incorrect), but a phonetic transcript is required. The book is full of fascination, and is the work of an acknowledged authority.

Essays of Joseph Addison. Edited by Sir J. G. Frazer. In two volumes. 906 pp. (Macmillan.) 8s. net.—It is a far cry from totemism and the "Golden Bough" to "that solemn prig," Joey Addison; but the journey is all delight to the editor. Of course, the great folklorist's preface will make a stir; it is Lucasian, and soaked with Addison. Only once or twice is the editor possibly tripping, once in the description of the morning on which he visited the house that was not (a description too beautiful for Addison), and once in the reference to "the Beast in Revelations"; without a careful search through the *Spectator* we cannot be certain that Addison would not have, as so many people do, credited S. John with a superfluity of Apocalypses. When we come to the Essays themselves we ask for a little more than the editor has given us. We do ask for the old capitals and italics; the *Spectator* is not quite himself

without them. We also have asked for some description of the famous news-sheet; perhaps no copy exists, but shrewd guesses may be made about it, and we know its measurements. And the secret of Addison, whom everybody seems to dislike quite as much as they love his creations, has never been revealed. The edition is said on the title-page to contain a few notes; they are few indeed. We have been unable to find any misprints in the large amount of Greek with which Addison treated his readers; this care in printing might with advantage be followed by other publishers, though it is too much to expect from our daily Press. To all Addisonians these two volumes will be a delight; but it is to the "preface" that they will turn again and again. We wonder if Addison would have liked it.

English Literature for Secondary Schools: Abbot Samson, The Wanderings of Rama, Maid Marian, The Isle of Gramarye (in two parts), *British Orators*. (Macmillan.) 1s. each.—This series has often been noticed. The books are of differing length, varying from 100 pp. to 140 pp.; the last is shorter. Peacock's *Romance* is a good introduction to this somewhat neglected writer; the *Ramayana* was needed, and the *Isle of Gramarye* contains quite long extracts from the ancient "histories" and chronicles, skilfully embedded in the re-telling of the editor, Mr. Roberts. Each little book has an introduction, and, as usual in this series, some helps to further study.

Boys and Girls. Verses of James W. Foley. 239 pp. (Dent.) 3s. 6d. net.—It is not often that we get an echo, a true echo, of R. L. S. in children's verse-books; but here, allowing for the extreme Americanisms and the differences of detail, the eternal child laughs out and defies, fears, and pities the grown-ups. The verses have come from various magazines, and quite the greater number are well worth the reprinting. One or two approach the genius that presides over boyhood and borrow an understanding smile. Our favourite is "A Prayer for Jimmy Banks," from which the following lines are taken:—

"Dear Lord, excuse Jim Banks and me
For hitting Aunt Griggs when we
Threw snowballs at the cat, because
We did not know where Aunt was.

"Jim Banks and me are sorry, Lord,
For drawing Teacher on the board,
And after what we got, we do
Not need more punishment from you."

But the volume is full of outlandish phrase and sentiment; unexpected and apparently true points of view of the puer Americanus; and here and there are quieter and much more mature pieces. For whom, then, is the book meant? We do not know; but it is meant to be read.

History.

Belgium. By R. C. K. Ensor. 256 pp. (Home University Library.) (Williams and Norgate.) 1s. net.—The introductory chapter to this little book shows that it has been written subsequent to, and in consequence of, the outbreak of the great war in August last. Its appearance is most timely, for it gives precisely that information concerning the country and people of Belgium, and just that sketch of the salient features of the history of the Belgian State, which recent events have made so desirable. It is not, however, in any sense a mere "war book." Its pages show no signs of passion or of haste. They are full of calm, unbiassed, and mature knowledge of their subject. The scheme of the book is topical rather than

chronological. It deals in turn with geography, ethnology, history, law, politics, art, and literature. It provides an invaluable introduction to the study of Belgian affairs, and it adds a bibliography which makes further study easy.

The Expansion of Russia. By F. H. Skrine. Third edition. vii+386 pp. (Cambridge University Press.) 6s. net.—Although we do not as a rule notice reprints and new editions, Russia and its affairs are so important at the present moment, and of so much interest to English people, that we cannot refrain from directing attention to the opportune re-issue, with a new preface, of this valuable survey of modern Russia, which first appeared in print twelve years ago (1903). It covers the history of Russia from 1815 to 1900, and it aims at giving (what is particularly valuable now) a sketch of the development of the Russian people and their economic activities rather than a bald outline of their chequered political history. In the last chapter is a statement, very significant as having been written long before the outbreak of the war, of the growing antagonism between Russian and German policies and aspirations.

A Political History of Contemporary Europe. By C. Seignobos. xxi+883 pp. (Heinemann.) 6s. net.—M. Seignobos's history has long been well known both in the original French and in an English translation. This is a "popular edition" of his work, and in the present demand for quite modern history will be found useful. Beginning his story in 1814, he traces first the internal history of each country until the close of last century, and then in eight chapters reviews the period as a whole under various headings, economic, ecclesiastical, and international. There are no maps, but there are good bibliographies to every chapter as well as an index. We heartily commend this work to our readers. They may find some matters in the account of England with which they may not agree, but it will be profitable to study our history from the point of view of a well-informed foreigner, and the history of other countries is now a most desirable acquisition which can be well gained by a perusal of these pages.

In Norman and Plantagenet Times. By W. Hislop. 184 pp. (Chambers.) 1s. 3d.—This is one of three similar books by the same author, with illustrations by Mr. Norman Ault. The stories chosen are told simply, and are nearly always followed by a "play" for the children to perform founded on the story. The book ends with five specimens of historical poetry, a list of dates, and suggestions to teachers as to the "properties" required.

The Tale of the Towns and The Tale of the Law. By A. E. McWilliam. (Cassell.) 1s. 3d. and 1s. 4d. respectively.—These are two volumes out of the five which constitute the historical section of Messrs. Cassell's "Modern School Series." They are reading books of a novel and interesting type. They leave the beaten tracks of political history, and follow the less-frequented ways of sociology and law. "The Tale of the Towns" has obviously many features of interest, and these are enhanced by a large number of excellent illustrations. It is more remarkable that "The Tale of the Law" should be made attractive, and that pictures to adorn it should have been found. There is no doubt, however, that Mr. McWilliam has achieved success. The illustrated story of such things as trial by ordeal, the judgment of battle, the branding of vagrants, and the suppression of heretics and witches is made as fascinating as any story of martial and heroic deeds.

Geography.

The Teaching of Geography. By B. C. Wallis. 219 pp. (Cambridge University Press.) 3s. 6d. net.—This is the latest addition to the Cambridge Handbooks for Teachers. In this volume on the teaching of geography, the author deals with the various aspects of the subject, such as descriptive, regional, and economic geography, in order to emphasise their relative importance; he describes a scheme of geographical work, and then proceeds to give valuable hints as to the use of practical exercises, globes, maps, etc. Throughout the book great stress is laid on the necessity of making boys do things for themselves, and many examples are given to show how this can be done.

In the conspectus of the geographical scheme (pp. 76-82), a course of study is sketched for the school-life of a boy in a secondary school; it comprises: (1) descriptive geography up to the age of eleven or twelve years; (2) transition geography up to the age of fourteen or fifteen; (3) systematic and argumentative geography. The third, or final stage is the most important, but it is very doubtful whether many boys would ever reach it, partly because of the great amount of work set down in the second stage, and partly because of the time devoted to examination work in many schools.

In the chapter on geographical explanation the localisation of the cotton industry in south Lancashire is dealt with in such a way that the method adopted might well be taken as a model for many other lessons.

This book can be recommended thoroughly to all teachers of geography, for Mr. Wallis has embodied in it the results of actual experience in teaching the subject. Every teacher should study Mr. Wallis's method, and, having thought over the suggestions contained in it, he should then formulate his own syllabus and elaborate his own course of geographical work.

Philip's Relief Model Map of Central Europe. (Philip.) One sheet, 3d. net; folded in paper cover, 4d. net; framed in ebonised wood, 2s. 6d. net.—This map is incorrectly named; the area from Warsaw to Bristol and Copenhagen to Basle is *not* Central Europe. It is reproduced photographically from a relief model, with a vertical exaggeration of approximately 70. As a pictorial supplement to a good contoured-map or for use with young children who cannot appreciate contoured-maps this picture should certainly be useful.

War Map of the Dardanelles and Bosphorus. Scale, 9 miles=1 inch. 25×20 inches. (Johnston.) Unmounted sheet, 6d.; cloth, folded, 1s. 3d.; cloth, rollers, varnished, 2s.—This map shows the forts, main roads, and railways of Turkey in Europe and the neighbouring portions of Asia Minor. There are enlarged insets of the two Straits, and an inset map of the Turkish Empire.

Table Talks and Table Travels. By M. Bloomer. 128 pp. (Blackie.) 1s.—It has long been known that much geographical interest may be awakened in the minds of young children by means of an account of the various lands from which the various articles usually found on the breakfast table are obtained. Miss Bloomer has utilised this idea to make an excellent and well-illustrated reader for young children. It is remarkable, however, that the story of sugar should be related to Java and the sugar-cane, instead of to the Continent and sugar-beet.

Field Work for Schools. By E. H. Harrison and C. A. Hunter. 92 pp. (Pitman.) 1s. 4d. net.—The course in this book deals efficiently with the borderland between geography and geometry, and the pupils who undergo such training will be assisted in their studies of both subjects. The authors wisely have refrained from attempting too much, and yet deal with the essential matters; their instructions and suggestions are both clear and definitely useful.

The Holy Land. School wall map. 50 in. by 42 in. Scale 6 miles to 1 in. (Johnston.) On cloth and rollers, varnished, or mounted on cloth cut in sections to fold. 12s.—By means of a combination of hachures and colours on the layer system, an excellent presentation of the relief of the Holy Land is used as a basis for New Testament geography. The great rift valley, the Lebanon ranges, the coastal lowland all show distinctly. This map occupies half the sheet; the other half contains a map on the same scale dealing with the Old Testament and indicating the tribal areas by varieties of colouring. The principal routes, the Levitical cities, and cities of refuge, are specially marked. Inset maps of the Assyrian Empire and of the city of Jerusalem in the time of Christ are useful additions to the main map. The relief map, illustrating New Testament geography, is also published separately, price 7s. 6d.

Mathematics.

A Treatise on Differential Equations. By A. R. Forsyth. Fourth edition. xviii+584 pp. (Macmillan.) 14s. net.—A comparison of the present with preceding editions shows that Prof. Forsyth has taken the opportunity of rewriting some of the articles, and of making a few comparatively small but important additions. The note on the method of Frobenius for the integration of ordinary linear equations which was introduced in the last edition has been supplemented by further notes on equations which have all, or some, or none, of their integrals regular. It is pointed out that for the establishment of the validity of the various steps, various propositions in the theory of functions are required, and these must be sought elsewhere. The aim of the author has been to make the treatise remain a text-book of practical methods, which can be supplemented by the adequate exposition of the fuller theory. We presume that it is upon these grounds that Prof. Forsyth has always omitted any reference to exact equations and integrating factors in connection with differential equations of the first order. Their interest lies more in relation to the theory than to the practical solution of equations, although some writers pay considerable attention to them. Other additions which deserve mention are a general construction of the intermediate integral of a partial equation of the second order when one exists, and a modified account of Ampère's method for second order equations. The enlarged work will certainly continue to be the standard book in English on the subject with which it deals.

Linear Algebras. By L. E. Dickson. Cambridge Tracts in Mathematics and Mathematical Physics. No. 16. viii+73 pp. (Cambridge University Press.) 3s. net.—This tract forms an admirable introduction to the general theory of linear algebras, including non-associative algebras. In the development of the subject no use is made of theorems peculiar to the theory of trilinear forms, matrices, or groups, but the relations of linear algebras to these topics is

treated in part iii. Part i. deals with definitions, illustrations, and elementary theorems. Some of the results and methods of demonstration are new, amongst them being a remarkably elegant and simple proof of Frobenius's theorem regarding the unique position of quaternions. In parts ii. and iv. the main theorems of the general theory are presented. Numerous references to the literature of the subject are contained in the footnotes, and will guide the student who desires to extend his knowledge beyond the limits of the tract.

Harling's "Acribo" Sectional Pad. 50 sheets in a pad with cover, 2s. 6d.—These pads are published in three forms: No. 1 is ruled in inches and eighths; No. 2 in inches and tenths, and No. 3 in centimetres and millimetres, the dimensions of (1) and (2) being 10×8 in. and of (3) 26×20 cm. The lines are printed in grey on good paper. We have examined the ruling, and find that it is very accurate. In all the pads, however, the scale across the breadth of the paper is slightly greater than that along the length. We have never seen any sectional paper which was free from this peculiarity, and it is perhaps due to unequal contraction in the paper when drying. This defect is of no importance when a curve is plotted from rectangular co-ordinates, but it introduces errors when polar or other co-ordinates are used, so that it is desirable that it should be eliminated.

Science and Technology.

Discoveries and Inventions of the Twentieth Century. By Edward Cressy. xvi+398 pp. (Routledge.) 7s. 6d. net.—This book has been written for those, young and old, who wish to have a non-technical account of the great scientific and material triumphs which man has achieved and is achieving. The contents are very comprehensive, and include such subjects as the revival of water power, developments in the use of fuels, applications of electricity, workshop appliances and processes, refrigerating machinery, soils and crops, motor-cars, the conquest of the air, ships of war and their weapons, applications of photography, radium. The subjects have been treated in an exceptionally clear manner, and the illustrations have the rather uncommon merit in books of this kind of being of real assistance to the reader. It is difficult to find any prominent example of recent engineering development which has escaped the author. Thus on one page we find a clear description of the Humphrey gas pump, on another diagrams showing how an escalator works, and on another some excellent examples of the three-colour process of photographic printing. There is a capital description, with clear diagrams, of wireless telegraphy. We can confidently recommend this book to anyone who wishes information of a simple type regarding apparatus and contrivances in common use.

The Triumph of Man. viii+248 pp. (Pitman.) 1s. 6d.—In this little book the author has given simple descriptions of engineering developments such as steam, gas, and oil engines, canals, railways, steamships, electrical appliances, etc., in a manner likely to be attractive to young readers. While some of the illustrations are good, many of the line drawings are rather rough, and several of the half-tone illustrations are almost unreadable. This is particularly objectionable in a book intended for young people, who naturally look to the pictures for help to understand the text. The boiler on p. 38 may be cited as an example of poor reproduction. A useful list of supplementary books is given at the end.

A Manual of Mechanical Drawing. By J. H. Dales. xii+181 pp. (Cambridge University Press.) 3s. net.—The first seventy-five pages of this book are taken up with descriptions of drawing instruments and materials and a few simple exercises designed to inculcate proper methods of draughtsmanship and accuracy. The remainder of the book contains a complete set of sketches of an 8-in. lathe, for practice in making working drawings. The author has taken great pains to impress correct methods of using instruments and to inculcate accuracy in setting out dimensions, with the result that the early portion of the book represents fairly what a competent teacher, himself a skilled draughtsman, would present to his students. We take the opportunity of stating here our opinion that without habits of cleanliness, accuracy, and good finish being insisted upon from the start, it is hopeless to expect real progress to be made in mechanical drawing. Students and teachers should derive benefit by reading what the author has to say on these matters. The examples given for practice are good, but it is unfortunate that the over-reduction necessitated by the small size of page (6 in. by 3½ in. net) renders many of the dimensions difficult to read. In fact, in some instances, the use of a reading lens may be desirable. Good paper has been employed, so that the reproduction is excellent, and the student who works conscientiously through the set of lathe drawings will have a good idea of ordinary drawing-office routine.

Miscellaneous.

The Little Mother Who Sits at Home. Edited by Countess Barcynska. x+172 pp. (Jack.) 3s. 6d. net.—The letters which make up this book were written by a mother to her son between his fifth and twenty-fifth birthdays. The boy lost his father on the day he was four months old, and his mother tried to stand to him "for mother, father, and big pal." The reader is left in serious doubt whether any son ever deserved the self-sacrifice practised over many years by this loving woman, sacrifice culminating in death from a painful disease brought on by privations uncomplainingly borne. Many of the letters—especially some of those labelled "unposted"—are real gems, and few can be read without a lump in the throat. Yet at the end of the volume one's chief desire is to kick the son—despite his double first and his private secretaryship to a prominent M.P.

The Public Schools Year Book, 1915. Edited by H. F. W. Deane and W. A. Evans. xxxii+791 pp. (The Year Book Press.) 5s. net.—We miss the gilt lettering on the cover of this annual work of reference, and the new black letters have an unfamiliar look. But the book will, with its additions, be of very real service, and parents will find in it just the information they want about the public schools, and what a boy can do after completing his work at one of them.

Games for Playtime and Parties. Stanley V. Willman. (Jack.) 3s. 6d. net.—This book claims to be an improvement upon other books dealing with games in two respects: (a) in describing games with which certain airs are associated the music is given, as the use of a piano adds greatly to the vivacity of the play; and (b) The words, in every case, are given in full, since these are by no means always familiar to the players. It is a book for children of all ages, and contains some eighty games. Many have musical accompaniments, and all are clearly explained and beautifully illustrated in colours. The volume is large quarto in size, and in a form most suitable for the piano.

EDUCATIONAL BOOKS PUBLISHED DURING MARCH, 1915.

(Compiled from information provided by the Publishers.)

Modern Languages.

J. J. Porchat: "Le Berger et le Proscrit." Adapted and edited by A. Truan. (Oxford Junior French Series.) With or without vocabulary. 96 pp. (Clarendon Press.) 1s.

Charles Perrault: "Quatre Contes." Adapted and edited by A. Wilson-Green. (Oxford Junior French Series.) With or without vocabulary. 96 pp. (Clarendon Press.) 1s.

"Matriculation French Papers." Papers set at the Matriculation Examination of the University of London from January, 1904, to January, 1915, with Model Answers to the last paper. 136 pp. (Clive.) 1s. 6d.

Classics.

"Intermediate Oral Latin Reader." Based on Cicero's "De Senectute," with extracts from Martial and Horace. By Frank Jones. With or without vocabulary. 116 pp.; illustrated. (Blackie.) 2s.

"A Short History of Classical Scholarship from the Sixth Century B.C. to the Present Day." By Sir J. E. Sandys. xvi+456 pp. (Cambridge University Press.) 7s. 6d. net.

"Lingua Latina." Edited by W. H. D. Rouse and S. O. Andrew. P. Ovidi: "Nāsonis Elegiacā." By L. R. Strangeways. 74 pp. (Clarendon Press.) 2s.

The Oxford Latin Course: Part i., "From the Elements to the Text of Cæsar's Campaigns in Britain." By R. L. A. Du Pontet. 318 pp. (Clarendon Press.) 2s. 6d.

English: Grammar, Composition, Literature.

"English Word Formation." By F. Ritchie. 55 pp. Seventh edition. (Allen and Unwin.) 9d. net.

"Composition for Junior Forms." By George H. Green. 84 pp. With 15 full-page illustrations, 8 of them being in colour. (Black.) 1s. 4d.

"On the Writing of English." By George Townsend Warner. 158 pp. (Blackie.) 3s. 6d. net.

Spenser: "Faerie Queene," Book i. Edited by L. Winstanley. lxxx+294 pp. (Cambridge University Press.) 2s. 6d.

"The Elder Brother." A comedy by John Fletcher. First printed in 1637. Now reprinted with slight alterations and abridgment for use on occasions of entertainments especially in schools and colleges. Edited by the Rev. W. H. Draper. x+76 pp. (Cambridge University Press.) 2s. 6d. net.

"Exercises in Prose Literature and Composition." By G. Clifford Dent. 300 pp. (Clarendon Press.) 3s. 6d. Part i., text and exercise, 8d.; text only, 4d. Part ii., text and exercises, 1s. 2d.; text only, 8d. Part iii., text and exercises, 1s. 6d.; text only, 10d.

Macaulay: "Horatius, Lake Regillus, and Armada." Edited by A. J. F. Collins. xiv+76 pp. (Clive.) 1s.

"Cowper and his Poetry." By James A. Roy. (Poetry and Life Series.) 184 pp. (Harrap.) 1s.

"Marlowe and his Poetry." By John H. Ingram. (Poetry and Life Series.) 160 pp. (Harrap.) 1s.

"Chaucer and his Poetry." By E. W. Edmunds. (Poetry and Life Series.) 244 pp. (Harrap.) 1s. net.

"Walt Whitman and his Poetry." By Henry Bryan Binns. (Poetry and Life Series.) 160 pp. (Harrap.) 1s.

Jonson: "A Tale of a Tub." Edited, with introduction, notes, and glossary, by Dr. Florence M. Snell. (Longmans.) 7s. 6d. net.

Tennyson: "Ænone and other Poems." With

introduction and notes by F. J. Rowe and W. T. Webb. 108 pp. (Macmillan.) 1s. 9d.

"British Orators." Passages selected and arranged by J. H. Fowler. (English Literature for Secondary Schools.) 80 pp. (Macmillan.) 9d.

"The Progress to Literature." Edited by R. Wilson. Stage i., "Wendy's Friends." 112 pp. 10d. Stage ii., "The Home of the Lost Boys." 144 pp. 1s. Stage iii., "The Chimney Corner." 208 pp. 1s. 3d. Stage iv., "The Story Porch." 204 pp. 1s. 6d. Stage v., "Masterful Men." 288 pp. 1s. 8d. Stage vi., "King's Treasures." 320 pp. 2s. (Macmillan.)

"How to Write: a Handbook based on the English Bible." By C. S. Baldwin. 212 pp. (Macmillan.) 2s. net.

"A Middle English Reader." Edited by O. F. Emerson. Second edition. 606 pp. (Macmillan.) 6s. net.

History.

"The Expansion of Russia." Third edition revised. By F. H. Skrine. viii+386 pp. (Cambridge University Press.) 6s. net.

"Modern School Series." "The Tale of the Towns." 208 pp. (Cassell.) 1s. 3d. "The Tale of the Law." 224 pp. (Cassell.) 1s. 4d.

"Oxford County Histories: Leicestershire." By C. E. Kelsey. 220 pp. (Clarendon Press.) 1s. 6d. net; superior binding, 2s. 6d. net.

"Outlines of Roman History." By M. A. Hamilton. 192 pp. (Clarendon Press.) 1s. 6d.

Pictures:—"Teachers' Handbook to accompany 'The Rulers of England.'" By Eileen M. Robinson and Irene Ward. 96 pp. (Harrap.) 1s. net.

"European Entanglements since 1748." Chronologically arranged by Haward Chambers. (Longmans.) 1s. net.

"Ancient Civilisation." By R. L. Ashley. 386 pp. (Macmillan.) 5s. net.

"The Pupil's Class-book of English History. Book I. From Early Times to 1485." By Ed. J. S. Lay. 128 pp. (Macmillan.) Sewed, 6d.; cloth, 7d.

Geography.

"Black's Travel Pictures: British Empire." Selected and edited by Robert J. Finch. 24 illustrations in colour; 24 illustrations in black. (Black.) 10d.

Cambridge County Geographies.—"Clackmannan and Kinross." By J. P. Day. x+146 pp. (Cambridge University Press.) 1s. 6d. "Moray and Nairn." By C. Matheson. xii+140 pp. (Cambridge University Press.) 1s. 6d.

Maps from the "Oxford Elementary Geographies." Edited by A. J. Herbertson. (1) British Isles: Physical; (2) (a) N.E. England; (b) Scotland: Physical; (3) Europe: Physical; (4) Europe: Political; (5) Asia: Physical; (6) Asia: Political; (7) (a) North America; (b) British North America: Physical; (8) (a) United States; (b) Central America and West Indies: Physical; (9) (a) Australia and New Zealand; (b) South America: Physical; (10) (a) Africa; (b) South Africa: Physical. (Clarendon Press.) 1d. net each, 6d. net for 12 of one kind.

"Principles of Physical Geography." By G. C. Fry. x+151 pp. (Clive.) 1s. 6d.

"The Use of Globes in Elementary Schools." By L. O. Wiswell. 128 pp. (Harrap.) 1s. 6d. net.

"Our Country's Industrial History." By W. J. Claxton. 244 pp. (Harrap.) 1s. 6d.

Mathematics.

"The Cambridge Elementary Arithmetics." By J. H. Webster. Book vii., without answers. 80 pp. Paper, 6d.; cloth, 7d. Book vii., with answers.

106 pp. Paper, 8d.; cloth, 9d. Teacher's Book iv. iv+130 pp. 1s. 6d. net. (Cambridge University Press.)

"Chambers's Practical Concentric Arithmetics." Scholars' Book VI. 72 pp. (Chambers.) Paper, 3d.; cloth, 4d.

"Chambers's Practical Concentric Arithmetics." Teachers' Book VI. 152 pp. (Chambers.) 1s. 3d. net.

"Matriculation Mathematics Papers." Being the Papers in Elementary Mathematics set at the Matriculation Examination of the University of London from June, 1908, to January, 1915, with full solutions to the Papers of January, 1915. 122 pp. (Clive.) 1s. 6d.

Science and Technology.

"Handwork as an Educational Medium." Second edition revised. By P. B. Ballard. 228 pp. (Allen and Unwin.) 3s. 6d. net.

"Woollen and Worsted." By Prof. Roberts Beaumont. (469 diagrams and 42 plates.) 640 pp. (Bell.) 30s. net.

"Biology." By G. N. Calkins. 241 pp. (Bell.) 7s. 6d. net.

"Zoology." Third edition, revised and enlarged. By Dr. A. E. Shipley and Dr. E. W. Macbride. xx+752 pp. (Cambridge University Press.) 12s. 6d. net.

"A Treatise on the Theory of Alternating Currents." Vol. i., second edition. By Dr. A. Russell. xiv+534 pp. (Cambridge University Press.) 15s. net.

"Electrical Engineering. Vol. i., Introductory." By Dr. T. C. Baillie. viii+236 pp. (Cambridge University Press.) 5s. net.

"The Book of Hardy Flowers." By H. H. Thomas. 512 pp. (Cassell.) 12s. 6d. net.

"Motor Cycles." ("Work" Handbooks.) 160 pp. (Cassell.) 1s. net.

"Elementary Human Biology." By J. E. Peabody and A. E. Hunt. 208 pp. (Macmillan.) 4s.

Pedagogy.

"The Teaching of Geography." By B. C. Wallis. (First volume of the Cambridge Handbooks for Teachers.) x+222 pp. (Cambridge University Press.) 3s. 6d. net.

"The Education of Karl Witte; or, The Training of the Child." Translated by Prof. Leo Weiner. 350 pp. (Harrap.) 4s. 6d. net.

Miscellaneous.

"Livelihood and Poverty." By A. R. Bowley and A. R. Burnett-Hurst. 222 pp. (Bell.) 3s. 6d. net.

"I Serve: a Handbook of Personal Service." By George H. Green, with a Preface by the Hon. Mrs. A. Lyttelton. 132 pp. (Black.) 1s. 4d.

"The Gospel according to St. Mark." Edited by Dr. A. Plummer. (New volume in the Cambridge Bible for Schools Series.) xlviii+212 pp. (Cambridge University Press.) 2s. net.

"English Folk-Song and Dance." By Frank Kidson and Mary Neal. viii+178 pp. (Cambridge University Press.) 3s. net.

"The Conquering Jew." By John Foster Fraser. 304 pp. (Cassell.) 6s.

"Reminiscences and Letters of Sir Robert Ball." By Valentine Ball. 436 pp. (Cassell.) 16s. net.

"What Men Live By: Work, Play, Love, and Worship." By Rev. Dr. C. Cabot. 364 pp. (Harrap.) 5s. net.

"Elementary Principles of Economics." By R. T. Ely and G. R. Wicker. Revised and adapted for English Students by L. L. Price. 420 pp. (Macmillan.) 4s. 6d.

CORRESPONDENCE.

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The Division of Examination Candidates into Classes.

ONE paragraph of Prof. Rippmann's article in your issue for April deals with the marking of the papers of candidates in the first examination proposed in Circular 849 of the Board of Education. If I understand him rightly, he proposes about 40 per cent. for a "pass," about 50 per cent. for "credit," and 66 to 70 per cent. for "distinction" or "honours." This suggestion, which reminds one of the former division of the London matriculation lists into honours, first class, and second class, gives rise to the question of the possibility of ascertaining three natural lines of demarcation among the performances of examination candidates.

From time to time you have dealt with the graphing of examination results in the columns of THE SCHOOL WORLD. Graphs published in the issues of your paper for July, 1900, December, 1902, and December, 1914, all showing the marks obtained by very large numbers of candidates in public examinations, take the same general form, and provide in each case two sharp bends in the curve. One bend indicates convincingly where the "pass" mark should be, and the other leaves no doubt as to the position of the "distinction" mark. But where on the smooth curve joining these easily defined positions should the "credit" mark be located?

It appears to me that the general shape of these examination curves teaches that there is considerable similarity in the attainments of the large majority of examination candidates, and that the minority can be divided into about two equal sets, the undoubted failures on one hand and the brilliant candidates on the other.

Perhaps it may mean that it would be unwise to try to differentiate between "credit" and "distinction."

CONSTANT READER.

THE point raised by "Constant Reader" is important, and I feel a little distressed that it did not occur to me when dealing with the question of the proposed "credit" mark; the fact that Circular 849 also fails to take it into account is no consolation. In that circular no attempt is made to suggest the percentage for "pass" and for "credit," but I think it is safe to assume that it was not intended that "credit" should be equivalent to "distinction," for if this were required for university matriculation, the proportion of successful candidates would be small. If an average mark of at least 50 per cent. is required in each group, it will be a rough and ready means of securing something higher than the "pass" standard; but, as "Constant Reader" says, it will not correspond to any line of demarcation in the examination graph.

WALTER RIPPMMANN.

The School World.

A Monthly Magazine of Educational Work and Progress.

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The School World

A Monthly Magazine of Educational Work and Progress.

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JUNE, 1915.

SIXPENCE.

THE BOARD OF EDUCATION SCHEME FOR THE CO-ORDINATION OF EXAMINATIONS.

THE proposals of the Board of Education outlined in Circular 849 in reference to the examination of the pupils of all grant-earning secondary schools have given rise already to much discussion among teachers and education officials. As several contributions to THE SCHOOL WORLD since September last have shown, there is a want of unanimity among competent authorities as to the wisdom of some of the proposed plans. Believing it to be of the highest importance that the needs and special circumstances of every class of secondary school should be taken into consideration before any scheme of official leaving certificate is put into force, we invited expressions of opinion from representative schoolmasters, schoolmistresses, and others on some of the points raised by the Circular.

We asked for a brief expression of views on the following questions, or on other subjects raised by the Circular which seemed to call for comment.

1. Is it desirable that every grant-earning school should be compelled to submit to an external written examination every year?

2. Would the institution of a scheme of official leaving certificates have an adverse influence upon individual work either of teacher or pupil?

3. Is it reasonable to ask all efficient schools to present a whole form for the first examination?

4. Ought girls to be expected to take precisely the same examinations as boys?

5. Are the universities the most suitable examining bodies?

6. Is an interchange of certificates among universities for various purposes feasible?

7. Is it possible to persuade the various professional bodies to accept the certificates proposed by the Board?

8. Ought not the Civil Service Commis-

sioners as a matter of course to accept the Board of Education certificates?

9. Is the proposed representation of acting teachers on the Advisory Committee the Board proposes to establish adequate?

By WILLIAM ALDRIDGE, B.A., B.Sc.

Headmaster, Shepton Mallet Grammar School.

PERHAPS the greatest difficulty in the path of many small, struggling rural schools is grinding poverty, and from their point of view, one of the chief objections to a compulsory, external written examination held annually is the large expense. This, in most cases, they cannot afford, and it ought not to be incurred at all unless commensurate advantages will accrue from the expenditure. It is difficult to realise whence these advantages will spring. If the one examination proposed would sweep away all others it would indeed be a boon, but this is most unlikely, and it would appear that it will merely add to the burden.

If the examination is to be held merely to satisfy the Board of Education that the school is doing its work efficiently and satisfactorily, one is tempted to ask what is the use of the present inspections. If the inspectors are thoroughly practical men, skilful teachers, and experienced in school management, their visits should suffice for this purpose. If in any case they are dissatisfied they should have power to demand a written examination, but such cases would be few.

Another great objection from the point of view of a school which is doing a special kind of work, such as mine, is, that the proposed examinations would tend to stereotype curricula and hence destroy the incentive to make new departures—an altogether deplorable result.

I have not time just now to speculate on the other points raised, and I am not in a position to give any useful opinion on some of them, but I would emphasise the fact that the small schools want *more* money and *fewer* expenses,

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and that the original experimenter must have freedom from trammels if he is to succeed. A special examination to suit his needs would be exceptionally costly and, moreover, difficult to fit into the general scheme.

By G. H. CLARKE, M.A.

Headmaster, Acton County School.

SOME "enemy" essayist has said that in England the best authorities are outside Government circles. Whether this is true or not, our public departments should be at present in a chastened frame of mind, for events have shown that their political chiefs have misread the signs of the times, clear enough though they were.

I reply, therefore, to the invitation of the editors of THE SCHOOL WORLD to join in a discussion on Circular 849 in the belief that suggestions will now be more effective with our rulers than they sometimes are.

1. It is understood that the object of the Board is to institute a test which shall decide whether a candidate is fit to leave his or her school and to take his or her place in the world. Part of the test ought to consist of a written examination. Pupils who are old enough to attempt this test cannot be kept waiting indefinitely. Consequently, the trial must be held once a year at least.

But this is not to say that the trial of candidates should be turned into an annual trial of the school. An inspection of the arrangements of school governors is a good thing, but it must be conducted apart from the granting of leaving certificates. It is not just to tack on to the School Leaving Bill many controversial clauses and to say that such a Bill is what schoolmasters have been seeking.

2. There is no reason to suppose that a satisfactory scheme would affect adversely teachers or taught. An official leaving certificate, to be gained by candidates who qualify in proper tests, could not but keep pupils up to the mark and stimulate masters and mistresses alike. Some weight, too, would attach to the school record, the influence of which would be felt during the entire school career. But we must not forget that a test which exalted the bookworm and ruled out a Wellington (of whom his mother wrote: "He is so stupid and idle at home, that I can do nothing with him"), far from stimulating, would destroy all educational work which does not consist entirely in imparting information.

3. As age largely determines the time at which a pupil leaves school, it seems a mistake to declare that leaving certificates are concerned with forms as a unit. At sixteen a university candidate may be in the VI., but an equally capable boy, in his own line, may

be in the V. Lower, and be about to take up a course fitting him to become a farmer or a colonist. The more efficient the school, the less likely are these two pupils ever to be in one form and able to take part in such an examination as Circular 849 suggests. Yet both deserve certificates to show their fitness to pursue their chosen careers, each after his kind. Conversely, the ages of a form may differ so considerably that all members of it do not want to be examined at the same time. Lastly, the composition of a high form is by no means rigid and unchangeable. Have not forms been made up to suit certain examinations that are subject to an age limit?

4. Few thoughtful people would insist on the classic, the mathematician, and the science student following the same course from A to Z. Few, one would imagine, expect schoolgirls to take precisely the same subjects, leading to the same goal, as boys do. But Circular 849 suggests (with Molière's doctor): *Il vaut mieux mourir selon les règles, que de réchapper contre les règles.*

The example of examining bodies proves that cooking, or work for certificate A, or riding, or manual work, can be tested just as well as Greek, or commercial subjects, or physics, or history. Consequently the argument that subsidiary subjects cannot be examined satisfactorily does not hold good. There is no virtue in an examination simply because it is written. The test must be human: Male and female created He them.

5. To be useful the test must be no hard and fast examination, academic in all cases. Do we not want our future business men to be educated and our men of science to become business men? Yet this is just the test for which the Board confesses that it is unable to make definite provision. One must then fall back on other bodies able to do this and entrust the examination of candidates to them. These bodies are the leading universities. A university is more human and less impersonal than an office. It is consequently more in touch with national needs. Obviously some co-ordinating authority will be required to secure equivalence of standard. Such a co-ordinating authority can be best furnished by the Board, which can act without fear and without favour, and set an example of perfect organisation.

6. As a man who can only take a pass degree at Cambridge may be just as valuable in his way as a doctor of science of London, we must recognise limitations and cater for many minds: the agricultural, the domestic, the purely literary, the artistic, the commercial, the scientific. This can be done by allowing a liberal choice of subjects in the certificate

test. The field can no longer be restricted now it is known that the supposed superiority of the old routine subjects is a fallacy. The smaller the choice the more difficult the interchange of certificates becomes. Even this difficulty may be solved by placing successful candidates in two classes in their subjects. For example, Oxford might demand amongst certain requirements, a first in Latin and a second in a mathematical paper, Cambridge a second in Latin and a first in mathematics, London more English than either, the Society of Actuaries, some commercial subjects. Woolwich would include a compulsory modern language, and so on. With a little mutual goodwill in drawing up the list of exemptions, candidates able to choose their necessary subjects, could be freed from Responsions, Previous, Matriculation, and other examinations.

7. In fact, unless concessions are thus made and professional and other bodies compelled to accept the leaving certificate, the introduction of the test will only add another to the ninety existing examinations, prove an additional burden, and not be valued by the public. In other words, it will be a failure. Professional bodies will have to sacrifice their whims for the national good. The needs of the nation come first, both for munitions and educational efficiency.

8. Foreigners have always criticised the waste of labour caused by the multiplicity of English examinations, and have marvelled that one Government department (the Board) could issue sweetly persuasive pamphlets containing maxims persistently broken by another department (the Civil Service Commission). Candidates for Civil Service appointments will, of course, be required to produce the certificate suitable to their branch before admission to any competition of not lower standard than that of the leaving certificate.

9. To formulate a satisfactory scheme—a normal test, with alternatives suitable to aspirants for many trades and of either sex—and to work it, a committee with a majority of acting teachers is needed. An advisory body with professional members in the minority would be an illusion, merely another of those amateur caucuses that have been such a curse to England already.

There is little hope for any scheme that is not backed by a Government Bill.

By J. H. E. CREES, M.A., D.Lit.

Headmaster, Crypt Grammar School, Gloucester.

MY opinions on examinations have been set forth in a letter which appeared in the *Times Educational Supplement* of October last and

also at greater length in a book dealing with various problems of secondary education which will be published in a few months. I willingly accept your invitation to restate my views briefly for THE SCHOOL WORLD.

1. Though I think that it would be desirable for most schools, I should deprecate the introduction of compulsion, a new principle. It might lead to a barren uniformity and hamper experiment. At the same time, I feel personally that a periodical external written examination is, within its scope, the only satisfactory test of a school's work.

2. It might stereotype existing conditions, especially if the examining body were dominated by the Board of Education and not independent. I have always strongly objected to the term "leaving certificate," because it implies that the work of a secondary school is finished at about the age of sixteen.

3. Our schools are of many different types. While most efficient schools should be able to do so, many small schools would find it impossible. It is my own practice always to send whole forms in for an examination, but I find that this is not possible everywhere. I am afraid, however, that some schools which ought to do so, do not.

4. Most emphatically not.

5. All things considered, yes. They have done much for us in the past, they have much valuable organisation and experience, their tests are objective rather than subjective. But they must consult teachers *systematically and regularly*, and on their panels of examiners teachers or ex-teachers must be well represented.

6. Yes, *pro tanto*, but it is unreasonable to expect all universities to require proficiency in exactly the same subjects, and I fear the standard of university entrance examinations is in some cases not what it might be. Much has been done already, *e.g.*, I find as a rule that my boys can gain exemption from Responsions, the Previous, and London Matriculation by passing one examination.

7. I do not think so. These bodies have different views as to what subjects should be required. Still, even here the *pro tanto* principle should apply.

8. Perhaps in lieu of a preliminary qualifying test. But all Civil Service appointments should be awarded by competition, not by favour.

9. It is entirely inadequate. I had hoped that the Teachers' Registration Council, in spite of its extraordinary constitution, would have preferred its claim to be itself the advisory committee. That would seem to be one obvious function of such a council.

By J. DUCKWORTH, B.A.

Organising Superintendent, Carlisle Education Committee.

1. NOT, "compelled," as an expressed obligation. But if a school submitted no pupils, the fact should require an explanation as a matter affecting the efficiency of the school.

2. I think not, if conducted wisely and cautiously. One has only to turn to Scotland to note the effect of the intermediate and leaving certificates upon Scottish education. These examinations have played an important part in moulding the character and form of secondary education; in giving to both elementary and secondary education greater definiteness and a measure of uniformity of curriculum and standard, without sacrificing the individuality of the school.

3. No. It is not difficult to foresee that the effect of such a course will be to delay the promotion of doubtful pupils, and of pupils strong in some subjects but weak in others. It will hamper freedom of classification, and especially of cross-classification where individual pupils, *e.g.*, may be nominally in two or three different forms for general work, but in the same set for mathematics or classics. Compulsion in this respect should be strongly resisted, or the same practice in regard to the retention in a lower form of doubtful cases as was produced in elementary schools subsequent to 1870 will tend to introduce itself into secondary schools.

4. Yes, where the subjects are identical. I have never discovered any reason why a different standard should be taken.

5. I think not. The university tradition is too conservative, and there may be a suspicion, just now at least, of the effects of Government control of university action in any form. I should favour a system of local examining bodies, composed chiefly of teachers, the best papers being revised and standardised by a central examining body. The members of both these examining bodies would, of course, be university men, and there need be no fear of a low standard of work being encouraged.

6 and 7. I see no reason why an interchange of certificates should not be feasible, and why professional bodies should not accept the Board's certificate, putting aside the financial aspect of the question. Many professional bodies maintain an examinations board, which incidentally provides a living for a number of people. The intermediate and leaving certificates of Scotland are accepted by the four Scottish universities, by Oxford, Cambridge, and London; by the General Medical Council, the Pharmaceutical Society, the Royal

College of Surgeons, Edinburgh, and various other professional bodies.

8. Yes. Certainly.

9. I do not anticipate that the presence of teachers on such an advisory committee as is suggested will have much practical effect. They are too remote from the field of action in which the examining body operates. It should not be difficult to frame a scheme whereby the country should be divided into a number of secondary-school districts with an examining committee appointed for each; this committee to consist of H.M. Inspectors for the district, a number of local teachers, chosen by rota and holding office for two or three years, and officials of Part II. authorities. The work of the pupils who reach the qualifying standard might then be revised by the advisory (or central examining) committee. By some such scheme the examinations would be kept in touch with the schools.

By G. D. DUNKERLEY, B.Sc.

Chairman of the Incorporated Association of Assistant-masters in Secondary Schools.

1. It is desirable that all pupils should have some official record of the standard of education reached by them on leaving school. The awarding of such a record necessitates a written examination, which may be at present one of a multitude set up by external authorities. Compulsion towards a standardised examination is infinitely preferable to the present chaotic state. The issue of a certificate should, however, not depend on a written test only; it should also show the school record of the pupil.

2. The present system of preparation for external examinations undoubtedly has an adverse influence, in many schools, on both teachers and pupils, especially since the practice of advertising successes in public examinations, with a view of attracting pupils, is fairly general. This arises from many causes. The examinations are not based upon the school curriculum; they are of too stereotyped a form, and so do not allow sufficient latitude in the variation of school work from year to year; and they are set by bodies which, in general, have not obtained the necessary intimate knowledge of school life, work, and conditions. Further, examination results have been considered during inspections; reference has been made to the results in inspectors' reports; and, what has been a particular defect, the success of a teacher has often been gauged by the examination results of his or her class. Examination should be purely a test of the power and capacity of the *pupil*. A uniform official examination controlled by a body upon which teachers are adequately represented should tend to remove these faults and

improve the work of both teachers and pupils. The uniformity must be of standard only; the papers set at any one school must depend on the curriculum at the school.

3. The ideal of efficiency in a school can only be obtained when the pupils in a particular class are all of sufficient ability to take the prescribed course without undue strain. The regulations of the Board of Education and of certain education authorities lead to far too frequent promotions and so militate against the efficiency of the class. Provided such regulations are modified, there will be no hardship in asking a school to present a whole form for the first examination. The examination should be suitable for an average pupil. It is not desirable, in the interests of true education, that a pupil should be placed in a class the level of which is far beyond him.

4. The curricula of girls' schools differ widely from those of boys' schools, and the style of examination should differ also.

5. The universities in the rôle of examining bodies for schools have not yet gained the entire confidence of the teachers. This, however, is not sufficient reason for doubting the ultimate success of an examination controlled by a body composed mainly of university and teachers' representatives. Such a body would by its very nature possess, to a greater degree than a body entirely composed of acting teachers, the qualifications necessary for an examining corporation.

6. The interchange of certificates among universities is carried out at present, and there seems no reason, save that of finance, why the practice should not be extended.

7. Many of the professional bodies recognise the certificates now given by examining bodies, and no doubt they would gladly accept certificates awarded under the proposed scheme.

8. The proposed examinations should be accepted as the preliminary qualification for all appointments made by the Civil Service Commissioners. The large number of certificates issued would, however, in all probability necessitate a further test, even for the junior appointments.

9. The exact meaning of section xi., Circular 849, with regard to the constitution of the advisory committee, is by no means clear. This committee will exercise a great influence, and it is extremely important that secondary-school teachers, who realise from experience the needs of the schools, should be largely represented upon it. The suggestion that the Teachers' Registration Council should have the power of nominating at least half of the members of the committee would, if carried out, meet with approval from the great bulk of existing teachers.

Circular 849 raises further important points for discussion. With regard to curriculum, at least, a considerable measure of freedom has, of late years, been allowed to schools. The setting up of official examinations, even of such limited operation in each school, may gravely imperil this freedom unless the allocation of grants is made, in every way, independent of the examination. Inspection should ensure that, by means of a competent and adequately remunerated staff, the school is giving full and sufficient instruction in a proper manner and according to the regulations of the Board of Education. And inspection should afford the only basis for assessment of grant. Unless the departments of inspection and examination are kept quite distinct, the danger will arise of the examination results affecting the school inspection report and thereby the assignment of grant.

The Circular suggests two examinations of which the Junior is to stand in place of Matriculation. This is educationally unsound in so much as it will allow pupils to matriculate at an average age of $16\frac{1}{2}$ years. It is doubtful if the average age of matriculants at London University is below $17\frac{1}{2}$ years at present, and the resulting reduction of the average age seems a retrograde step.

The second examination mentioned in the Circular is to be taken two years later, but no particular inducement is offered for taking it. The question of the age at which the examinations should be taken is closely bound up with the leaving ages as defined in the schemes under which the schools are governed. These ages vary largely, and the schemes will have to be modified in many cases if participation in the examinations is to be ensured. Again, there is a demand in certain quarters for the retention of existing junior examinations.

These considerations have impelled the Incorporated Association of Assistant-masters in Secondary Schools to suggest that two examinations, analogous to those proposed, should be taken at other ages and with other objects than those proposed in the Circular. It considers that the first examination should be taken somewhat earlier and be regarded as a junior examination to serve as an entrance to the minor professions, but not to qualify for entrance to a university. The lowering of the age for the first examination would meet the difficulties of the smaller secondary schools in which a large proportion of the pupils leave before attaining the age of $16\frac{1}{2}$ years. The second examination could then be taken at the age of about $17\frac{1}{2}$ years and serve as a matriculation examination. This in itself would be a sufficient reason for taking it, whereas in the Circular no particular induce-

ment is suggested. The higher professions, also, such as the legal and medical, might accept this examination in place of their own preliminary. A second examination of this type would be a real examination; and the certificate issued would arouse real endeavour.

The question of finance is no small one, and could obviously not be mentioned in the Circular. The present external examinations have suffered largely owing to lack of finance, and it is to be hoped that under the final scheme ample grants will be made to ensure complete efficiency.

Finally, the present time seems inopportune for setting up large educational reforms, and it is highly advisable to allow further time for a detailed consideration by all types of schools and bodies concerned.

By NORMAN L. FRAZER, M.A.

Headmaster, Grammar School, Batley.

I DISBELIEVE entirely in the efficacy of general school examinations. There is always a considerable percentage of boys who will never pass an examination apparently suitable for their age—even the magic age of “about sixteen,” and to prepare them for such an examination is not only not to give them an intellectual stimulus, but to treat them in the least stimulating way possible. But the truth is that most of those who support general external examinations are more concerned with giving a stimulus to the masters than to the boys; they forget, it seems to me, that the easiest of all methods of teaching is that provided by an examination routine; quite a wooden teacher is often successful in passing his candidates, and there is no reason why he should not be. Teachers are, of course, not very dissimilar from other people, and so necessarily a good many of us are rather wooden; but we shall not become less wooden by being put into a rigid groove. On the other hand, many of us have been known to respond to tactful “inspection” and to expand when given the freedom suitable to professional practitioners.

It is urged, however, that the co-ordination of examinations is a national need. This may be true, but it has no bearing whatever upon the compulsory taking of an examination—established or proposed. But, with this protest admitted, I heartily agree that the co-ordination of examinations is desirable. For till some other test of attainment in specific branches of study is discovered—or rather developed—some boys, albeit a vast minority, must be prepared for examination; and in order to interrupt as little as possible the general school training, these examinations should be reduced to a common multiple.

That general ability in the majority of careers is to be assessed by success in such an examination I do not believe for a moment; but if a few professions involving a specialised technique think that they can only secure a proper supply of recruits by insisting on certain preliminary attainments, it must be pointed out to them that a good general education is the only foundation of sound professional work, and that this general foundation can be tested in one type of examination suitable for all professions. I feel that the reluctance of the professions to accept such an examination is that they fear that the supply of recruits would be hopelessly cut off by an examination “approximately of matriculation standard.” I believe that such a fear is well grounded and that, unless we are prepared to admit that our professional men in the past have been inefficient, we have here a confession of the futility of such an examination as is proposed in Circular 849. At any rate, unless the professions can be prevailed upon to accept a common examination, it is idle to pretend that the Board of Education’s proposals will relieve the burdens of schools; they will merely add to them by establishing one more examination.

But suppose the professions give way and the Board really does succeed in reducing the number of examinations, what is to be the examining authority? The Board says the universities. The suggestion has something to commend it. The schools are concerned with education, and so are the universities; undergraduates have usually been in schools, so why should the universities not settle the lines of their preliminary training? This reasoning is too ingenuous, for it is only a very small fraction of secondary-school pupils who proceed to the universities, and those few are the academically disposed. The new truth is that the schools are not primarily training-grounds for the universities, and that much of their value for the future will lie precisely in the power they show of shedding their academic tendencies.

If there is to be a general examination for all schools, let the co-ordinating authority be the State, with its boundless knowledge of national needs and its opportunity for observation and initiative, or let it be the Teachers’ Council. The universities have their work, and every year they are doing it more finely, but it is no part of their work to impose their methods and their attitude of mind upon the schools. If, however, England has suddenly discovered that the universities are not only the coping-stone, but also the foundation of her educational system, we may at least ask for more “school” representatives on the proposed Advisory Committee—if not to leave

the academic mass, at any rate to ascertain the trend of the academic mind.

By F. GADESSEN, M.A.

Headmistress, Blackheath High School, Girls' Public Day School Trust, London, S.E.

1. No grant-earning school should be compelled to submit to an external written examination every year.

2. The institution of a scheme of "official" leaving certificates would not necessarily have an adverse influence upon the individual work either of teacher or pupil.

3. In the sense in which I understand the Board of Education frames this clause, it is reasonable to ask all efficient schools to present a whole form or set for the first examination.

4. Girls ought not to be expected to take precisely the same examination as boys, but the same examination should be open to both boys and girls.

5. The universities are the most suitable examining bodies.

6. I think an interchange of certificates among universities for various purposes is feasible; certainly it is *very* desirable.

7. I hope it is possible to persuade the various professional bodies to accept the certificates proposed by the Board of Education.

8. I do not understand that there is to be a new Board of Education certificate; but a certificate approved by the Board of Education ought to be accepted by the Civil Service Commissioners as a matter of course.

9. The proposed representation of acting teachers on the suggested advisory committee is not adequate.

By J. W. ILIFFE, M.A.

Principal, Central Secondary School, Sheffield.

IN reply to your questions respecting the Examination Circular, I beg to say:

1. That I do not object to the suggestion that every school should submit to some external written examination every year, so far as the topmost parts of it are concerned.

2. I do not think that a scheme of official leaving certificates would necessarily have an adverse influence upon individual work. The standard of the lower examination will not be high and will not affect specialisation, which should begin later. I think I should object to a uniform syllabus for the whole country.

3. It is not reasonable to ask for the presentation of a whole form for the first examination. I can see some hardships in this proposal, a grave danger to the struggling secondary schools, and a temptation in some

cases to deal with classification in a manner adverse to the best interests of the pupils.

4. I am quite clear that girls should not be expected to take precisely the same examinations as boys. In some cases they may, but not generally.

5. At present the universities are the best examining bodies, but I hope for control by the Teachers' Registration Council.

6. An interchange of certificates among universities appears not to be feasible at present, but I think that the Board of Education ought to press for this to be brought about. Considerable progress has been achieved in this direction already.

7. Similarly, the Board should press the various professional bodies. I think there would be little difficulty, since many of them already accept various alternative schemes.

8. The Civil Service Commissioners might very well accept the Board of Education certificates as *qualifying* candidates, retaining the power of *selection* from amongst such candidates. If these certificates were insisted on, the cramming institutions would receive a severe blow, and the school leaving age would be in many cases considerably raised.

9. The representation of acting teachers on the proposed advisory board is quaintly ridiculous. An advisory committee is the wrong idea. The representatives should be on the controlling body. The position of an adviser who has no vote is a very unsatisfactory one.

My own view is that teachers must press for the control of examinations to fall ultimately into their hands, with or without collaboration of local educational authorities. On the whole, I think the latter bodies are better out of it.

By the Rev. E. F. MACCARTHY, M.A.

Headmaster, King Edward's Grammar School, Five Ways, Birmingham.

1. It is desirable that every grant-earning school should be compelled to submit to an external written examination every year.

2. The institution of a scheme of official leaving certificates would have no adverse influence upon individual work either of teacher or pupil.

3. With proper safeguards, it is reasonable to ask all efficient schools to present a whole form for the first examination.

4. Girls ought not to be expected to take precisely the same examinations as boys.

5. The universities are the most suitable examining bodies.

6. An interchange of certificates among universities for various purposes is feasible.

7. It is possible to persuade the various professional bodies to accept the certificates proposed by the Board.

8. So far as to limit Civil Service competitions to holders of Board of Education certificates, the Civil Service Commissioners ought as a matter of course to accept the certificates.

9. The proposed representation of acting teachers on the advisory committee the Board proposes to establish is not adequate.

By MARGARET E. ROBERTSON.

Headmistress, Christ's Hospital, Hertford.

1. GENERALLY speaking, an annual written examination is desirable in schools for some at least of the elder pupils. (This is required in most endowed schools, by the terms of the scheme of administration.) In practice a very large number of schools take one or more written examinations every year. I should object on principle to any rigid compulsion in the matter; and "external examination" is to some extent a question-begging phrase.

2. Here, again, the form of the question makes reply somewhat difficult. Any scheme which concentrates the attention of teacher and pupil on the *actual examination* rather than on the course leading up to it must have an "adverse influence" on the individual work of both. But I can without difficulty conceive of a "leaving certificate," whether "official" or not, which should be so framed as to avoid this danger.

3. It seems to me desirable, and in accordance with sound principle, that the unit for the first examination should be a form or class, and not selected pupils. Much harm has undoubtedly been done in the past by sending in "star" pupils, to the neglect and detriment of less brilliant scholars. A large proportion of "efficient schools" will find this regulation no hardship, provided that it is not made rigidly compulsory. And I believe most schools will be willing to aim at sending in complete forms if it is clearly understood that reasonable elasticity will be allowed where the conditions of the school make it necessary.

4. In my opinion, the conditions of modern life make variety in education (and therefore in examination) essential both for boys and girls. Some girls can certainly take precisely the same course as some boys, but not every boy should take the same course as every other boy, and *a fortiori* not all girls should be expected to take the same examination as (all) boys.

I do not wish to see boys and girls rigidly differentiated in teaching and training according to sex, but rather to see for both boys and

girls opportunity for wide choice in learning different subjects. (For instance, I have always advocated a knowledge of cooking for boys.)

5. This is a difficult question, but, on the whole, and with many reservations, I should be inclined to answer it in the affirmative, subject to the full and adequate representation of *teachers* on the examining body. Universities stand for learning and have many functions besides that of examining, though there is a real risk in these days that the many functions may be delegated to specialist branches, and that the freshest and most fruitful influences in the parent body may fail to reach them.

On the other hand, purely examining bodies, those having no other basis of existence, run even more risk of becoming stereotyped and ineffective. A co-ordinating authority, composed of the right elements, could utilise the machinery and experience both of the universities and of other examining bodies and should be able to keep their respective defects in check.

6. Yes. This is already done to a considerable extent, and I am convinced that such an interchange is quite feasible.

7. Since professional bodies have hitherto been willing to accept the most diverse certificates with apparent readiness, I can see no reason why they should not be "persuaded" to accept any certificate of sound education guaranteed by the universities and the Board of Education. I cannot say the Civil Service Commissioners "ought" to accept a certificate as a matter of course, unless I know for what purpose the certificate would be offered. Obviously the Commissioners cannot accept it as qualifying for appointments without further test, since candidates largely outnumber vacancies.

There is much to be said on educational grounds for limiting certain competitions to the holders of such certificates, but such a regulation raises wider questions, and cannot be at present decided on purely educational grounds.

9. As far as I can understand the proposed constitution of the advisory committee, I consider the representation of acting teachers entirely inadequate.

By G. M. TODHUNTER, B.A. (Lond.).

Headmistress of the Guildford County School for Girls.

1. I THINK it is desirable that every grant-earning school should submit to an external written examination every year.

I presume that the Board might occasionally make individual exceptions to this rule.

2. I am entirely opposed to the scheme of official leaving certificates.

3. I think that it is reasonable to expect a whole form to enter for the first examination.

4. Boys and girls should not be expected to take *precisely* the same examinations. Some option should be allowed with regard to science and mathematics for boys and languages and literature for girls.

5. Yes, certainly, when in co-operation with acting teachers.

6. I believe so. It is already done successfully in Oxford, Cambridge, and London external examinations.

7. I believe it is quite possible.

8. Certainly. Our school sends in candidates for the lower grade Civil Service examinations. It is always a matter of regret to me that these examinations at present rest on no real educational basis. I believe that there should be much closer co-operation between the Board and the Civil Service Commissioners.

9. I think that the representation of acting teachers on the Board's advisory committee might be increased.

By ERNEST YOUNG, B.Sc.

Headmaster, the County School for Boys, Harrow.

1. I HAVE no objection; in the upper part of the school it offers a stimulus to the boy, and in places where they are so unfortunate as to possess a slack staff, I can understand that it might provide a very useful stimulus for them also, but as I have not yet suffered this disease, I don't know the value of the remedy.

2. I would welcome a scheme of official leaving certificates, provided that the examinations did away with the present multiplicity, but not if they merely added another. Individual teachers and pupils do not suffer from having to work on reasonable lines and for definite ends, but there should be alternatives enough to suit all except the veriest cranks.

3. In theory I think it is unreasonable, but in practice it seems to work without much hardship, and it is generally possible to dodge regulations of this kind.

4. No.

5. Under judicious pressure they might become efficient. I think many of the London University papers excellent, but the Cambridge Local Preliminary Geography papers are a wicked sin. People who set questions like those are not fit to examine anything, except dustbins.

6. They ought to be interchangeable on certain conditions.

7. I doubt the possibility of persuading the

council of any professional body to accept the certificates. They might be and should be compelled to accept them.

8. The Civil Service examinations and the school examinations might, in some directions, be one and the same thing. The Commissioners could help us to keep our boys longer than we do and, in return, we could give them better material than they get. As a branch of the Government services they ought to co-operate with, and not oppose the Board of Education.

9. The acting teacher can be a great help or a great nuisance; he is, just as often as other people, narrow-minded and a crank. He should be easily removable; he then ceases to be much of a danger.

THE TEACHING OF ENGLISH COMPOSITION TO HIGHER FORMS.

By J. H. FOWLER, M.A.

Clifton College.

1.—A PLEA FOR THE ESSAY.

IT has been stated lately that it is the present fashion among many masters to give up the setting of essays. I have no means of knowing how far the statement is true; but I can scarcely wonder at such a state of things, after all the attacks that have been made upon the school essay in recent years. Yet to abandon the essay instead of reforming it seems to me a most unwise counsel of despair. Properly used, the essay is one of the finest instruments of humane education; and at a time when the practice of Latin and Greek composition has been abandoned except for a small minority, it is doubly regrettable that we should throw away the one instrument that can make up for the lack of the old training in classical composition—an instrument moreover that is ready to our hands, that can be fitted into the curriculum of every boy and girl, and made to assist the specialist and the technical student as well as those who are in search of a general education.

It has indeed been urged upon me that the day of the essay is past, because the days of general education are past: we are all specialists now. To this there are two effective replies. First, if it be true that general education is nearly gone, let us "cleave to that which still is left." Anything which can save a boy from narrowing his interests prematurely into those of his particular profession has become of increased value. Surely this is one of the innumerable lessons we ought to be learning from the great war—the superiority as a rule of life of Terence's noble saying *Homo sum: humani*

nihil a me alienum puto over the sectional and separatist motto "Business—my own particular business—as usual." Nothing in the whole curriculum gives us an equal chance with the essay of helping our pupils to widen their interests in life. Secondly, the practice of English composition is the one thing that can teach the specialist to express himself in the language of the community instead of sinking into a sectional jargon which, beginning by seeking to be intelligible only to professional students, soon loses itself in a morass of muddy thinking and so becomes unintelligible even to its practitioner.

The purpose of this short paper is to present a few suggestions in the hope that they may be of value to teachers who want to make profitable use of the essay.

II.—CHOICE OF SUBJECT.

Fault is often found with public examinations for the type of subject set; and it is true that the subjects are frequently far from being the best that might be chosen and that the same subjects appear again and again with wearisome monotony. But is not the schoolmaster all too apt to take his cue from the public examiner? Not enough allowance is made for the difficult conditions under which the public examiner works. He knows nothing, as a rule, of those who are to produce essays for him—what historical or literary or other knowledge they may or may not possess. Nay more, he is debarred from choosing a subject which would give an advantage to candidates who should chance to be fresh from the study of a particular period or another. But in setting essays for his own form the schoolmaster is under no such disabilities. He is aware in most cases what knowledge he can count upon and what it is useless to expect. If he is setting subjects that are not to be dealt with immediately in school, but written upon after an interval which gives opportunities for research, he has a still wider choice of subjects available. If it should be objected that boys have to be prepared for public examinations, and that therefore the type of essay set in these examinations must after all determine the type of essay set in school, I reply that the inference is unsound. It may be advisable to prepare boys for what they will get in an examination by an occasional theme of a similar kind. But as a general rule the boy who has been trained in the best way will pass the test of a public examination more easily and certainly than the boy who has been left at the treadmill of subjects that provide little training and no stimulus.

(1) Avoid—except as occasional practice

with the object above stated—the "unrelated" essay. Connect your subjects with the history or literature that is being studied in class. Now and again choose a subject that will revive the faded memories of the history or literature that was read last term.

(2) Set the subject in such a way as to give some hint of the kind of treatment you desire. *E.g.*, if the subject is "Colonies," we may add to the question, "With what objects have colonies been founded in ancient or modern times, and what is the ideal attitude of a mother-country to her colonies and of the colonies to their mother-country?"

(3) Avoid abstract subjects—*e.g.*, "Ambition." But this does not mean that ethical subjects are to be avoided, if the question is made definite and practical: "Is ambition a desirable quality in a ruler?" "How far is the maxim of forgiveness of enemies applicable to dealings between nations?"

(4) Choose subjects that exercise (a) the *imagination* or (b) the *judgment*. We may take as examples:

(a) An imaginary description of the island in *The Tempest*; an imaginary speech of a general or statesman; a description of a siege or battle in a soldier's letter; a dialogue between two historical characters, or a letter from one to another.

(b) A comparison between two characters in a play, illustrated by quotations; a survey of Europe in a particular year—political or social conditions.

(5) Occasionally try a subject that will make the class think about social questions—*e.g.*, municipal trading, garden cities, poor relief, casual labour, compulsory insurance or vaccination.

III.—PREPARATION.

How much help is it wise to give beforehand? Above all things we want to encourage, not to destroy, the pupil's power of initiative. Anything like the construction of a "skeleton outline" for use by the class is therefore to be deprecated. (It might be worth while to try the outline as an exceptional measure with a backward form, but this is a different thing). But when the subject is difficult, a preliminary talk may save much waste of time by putting the class on to profitable tracks of thought from the start.

A real difficulty is to get boys to make intelligent use of the material which is to be found in books—to assimilate, instead of merely "conveying" it. I have sometimes been tempted to resolve never to set a subject for which assistance can be got from books. But this would be a serious mistake. One of the best services that essay-writing

can render is to give practice in the art of using material. With a little guidance and correction the average boy begins to grasp the all-important difference between assimilating the contents of a book and stealing them. Much can be done by choosing questions for which books provide the raw material, but give no direct answers. For example, "Was the French Revolution or the American the more important in its consequences?" is a good question, because, while it involves research, the research will not in all probability discover a ready-made solution.

IV.—AFTER THE ESSAY: ESSAY-NOTES.

What can be done after the essay, beyond correcting it and giving it back, is largely a question of time: the school time-table seldom admits of our doing all that suggests itself as profitable. The conscientious school-master may, however, find some consolation in reflecting that the interest of the youthful essayist in a theme evaporates quickly when the essay has once been written. In order that this interest may not have evaporated wholly, the interval between the writing of the essay and any subsequent discourse should be as short as possible.

There is more to be said for the plan of giving a skeleton outline after the essay than giving it beforehand. But I prefer the system which has obtained for many years in the sixth-form at Clifton—writing a short "essay-note" and distributing copies of it to the class. Less formal than the "outline," it does not presume to dictate the method that should be followed, recognising that there are many ways of approaching a question and that a certain freedom of choice is to be encouraged. At the same time it suggests, for those who desire the hint, one possible way; and in spite of its small scale and the necessity for compression, it seeks to preserve something of literary shape and completeness. I venture to conclude by giving a few examples.

A.—*Was Elizabeth's success due to herself or her Ministers?*

"Elizabeth," wrote Froude, "was a woman and a man; she was herself and Cecil." Burghley's cautious wisdom saved Elizabeth from the consequences of feminine mistakes. Yet the view that Elizabeth was greater than any of her Ministers is nearer to the truth than the view which represents the Ministers as preserving England and achieving its greatness with the great Queen merely as figure-head. In details her policy was tortuous, shifty, procrastinating, ignoble; her desire that statesmen and commanders should imperil themselves for her sake, take all risks and be disowned afterwards, was base in the extreme; but more than any one states-

man she divined intuitively what course was best for her people, and her constant shifts to postpone decision gave England time to grow strong. That she could choose and keep statesmen who served her so splendidly as Cecil and Walsingham is itself part of her claim to greatness. There is much in her to dislike; not least her ingratitude to her servants; but even now it is difficult to read her speeches to the nation without a responsive thrill—a thrill that could only be awakened by one who had succeeded in identifying her destiny with the nation's.

B.—*"The chief glory of every people arises from its authors"* (Johnson).

In one sense this is clearly true. *Vixere fortes ante Agamemmona . . . ignoti . . . carent quia vate sacro* (Horace, Odes IV., ix. 25): it is the authors of a nation who preserve alive the glories of its great men. But Johnson meant more than this, and the world is hardly of his opinion: great generals, monarchs, statesmen—do they not all bring more glory to a nation?

We shall be less in a hurry to pronounce Johnson wrong if we reflect that (1) the nations that have left most mark on the world are the nations that have produced the greatest literatures; (2) the most permanent part of the influence of Greece and Rome has come from their literatures; (3) the spirit of great nations seems to find its finest expression in its literary masterpieces, and they seem generally to be produced at the time of intensest and best national life; (4) Johnson included men of science among authors, science being in his day still regarded as a branch of literature: we should add artists to men of letters and science.

C.—*What are the main uses of the study of history?*

"History repeats itself" is the proverbial justification of the study, and Thucydides (I. 22) can be quoted in its support. Yet, as Burke says, "Louis the Sixteenth was a diligent reader of history; but the very lamp of prudence blinded him." Historical analogies are often deceptive. Even accomplished historians deduce opposite lessons—Froude was a Conservative, Freeman a Radical. The use of history is something more subtle. The study (1) "liberalises politics" by widening our outlook, enabling us to comprehend and judge intelligently the points of view of other parties or other nations, to see the larger tendencies of things. It also helps to save us from the petty personalities of the baser politics. (2) This widening of the imagination and quickening of sympathy goes much further than politics. We may, like Erasmus, "live on terms of intimacy with other ages than our own." "To be with Acton," it was said, "was like being with the cultivated mind of Europe incarnate in its finest characteristics." The ideal of a "liberal education" is realised by those who study history in this spirit. (3) For intelligent patriotism some knowledge of our country's history is required; for intelligent cosmopolitanism some knowledge of the history of mankind. (4) History is no longer merely a "branch of literature": it is a science, and trains its students as rigorously as any other science

in patient observation, comparison, judgment. Yet (5) we need not repudiate the connection with literature, nor the "use" of the delight we may derive from the spectacle of the pageant of humanity.

D.—"*How small, of all that human hearts endure,
The part that kings or laws can cause or cure.*"

Though Johnson (who contributed these lines to Goldsmith's "Traveller") lived in the age of the "benevolent despots," and was himself a strong Tory and supporter of authority, he was not disposed to magnify the influence of law and government in human life. "Our own felicity we make or find." Through a large part of human history governments had been as often oppressive as helpful. He thought of them as using *external* pressure, and he knew that happiness depended mainly on temperament and character, on the training of the emotions and the will.

At the present day we realise that the distinction between these external and internal causes of happiness is not ultimate, because character itself is largely the product of circumstances. These circumstances can be affected by laws for good or ill: wise laws, good education, can assist character. The present danger is perhaps to exaggerate what the State can do, and to weaken self-reliance and individual effort.

(N.B.—There is no emphasis in the quotation on a distinction between "kings" and "laws.")

E.—Byron and Keats. "*He describes what he sees, I describe what I imagine—there is the difference between us*" (Keats on Byron). *Discuss and illustrate.*

Byron's strength is in description: but (e.g. in the great passages of "Childe Harold") he describes what the ordinary intelligent man sees for himself, though in language more perfect than the ordinary man can reach. His triumphs are akin to rhetoric—to the eloquence that is "heard" rather than to the poetry that is "overheard."

Keats describes what he imagines—things we should never have imagined for ourselves. Autumn sitting on the granary floor—magic casements opening on the foam of perilous seas in faery lands forlorn—the little town that the procession on the Grecian Urn had left desolate—the "frosted breath" of the Beadsman and a hundred other things in the Eve of St. Agnes—the room in the house near the minster where the girl is reading the legend of St. Mark—Cortes's men staring at each other with a wild surmise—in a lighter vein, the signboard of the Mermaid flying away to Elysium. Keats makes us see all these things, and they are all his own creations.

The Story of English History and Trade. By H. L. Burrows. viii+208 pp. (Black.) 1s. 6d.—This little book is described as a "reader," but it is better than that, or at least much better than most books which appear under that title. The author has diligently studied at least the books of which he gives a list on p. 206, and the result is a useful, readable, and businesslike account of the subject. It contains all that we should think desirable for the school classes for which it is intended. There are many illustrations and an index.

THE COUNTY SCHOLAR: A PROBLEM AND A POSSIBLE SOLUTION.

By CHARLOTTE M. WATERS, B.A.
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Kent.

THE year 1902, which produced a revolution unprecedented in England and possibly unforeseen by those who brought it about, will appear in future social histories, if their writers know their business, as the date of the birth of a new phenomenon, and that phenomenon is known to us teachers as the county scholar. It was said, I believe, by George Gissing that class distinctions are the most fundamental thing in English life, and in a sense that is true, in spite of the fact that the border-line between class and class is more a smudge than a line, across which individuals are passing constantly in both directions. But hitherto the process has been slow (has it not been estimated as occupying three generations?) and confined to a small number, whose fate was largely a matter of chance. But the Act of 1902, by throwing on the State the burden of organising secondary education, including the provision of the vast army of teachers required for its elementary schools, has committed the nation to the theory that this interchange of classes is no longer to depend on chance, but on ability, and that it behoves the State to remove every possible obstacle in the way of its achievement. Whether it was meant to do this is another matter, but that it has so committed the nation is indisputable. Any open attempt now to block the path of the son of the artisan on his way to the seats of the mighty is an impossibility. I say open attempt advisedly, for of the subtler and hidden effort in that direction there is still plenty of evidence. It is the business of secondary-school teachers to see that the experiment has every possible support that may make it a success.

Now the county scholar differs more or less from her school-fellows in two ways; her home surroundings are different, and she is not new to school life when she enters the secondary school. Add to this that while in the case of the middle-class paying pupil the education that will be achieved will differ from that of her parents only as one generation differs from another, in the case of the artisan's child it will differ by whole celestial spheres; especially will this be the case as between mother and daughter. All these factors must be considered in the selection of the child to whom the opportunity of proving herself is to be given. The usual methods are, a written test, a report from the head teacher of the elementary school, and a short interview with

the examiner. Different authorities attach different relative importance to these, but most have all three in some form. After ten years' experience the value of these factors seems to me somewhat as follows:—The written test, however carefully devised, is of little value in dealing with children of 10 and 11, and it should, in my opinion, be quite subordinate to the interview and the report of the child's teacher. Personally, I have always found the head teachers' reports most valuable and their estimated order of merit among their own candidates surprisingly correct. An inspector told me that this was not always the case, some teachers tending to prefer stolid mediocrity to troublesome originality; and I can, of course, speak only of the district I know. The interview, guided by the head teacher's report, should be mainly designed to estimate character, aptitudes, and home environment. This last, on which the future success of the scholar depends so much, seems to me far more difficult to allow for than either ability or character.

In the case of scholars from abjectly poor and over-crowded households I do not hesitate to say that only the most marked mental ability and force of character will justify the award of a scholarship; to the ordinary merely bright girl the handicap is too great. When awarded to girls in such very poor circumstances then *substantial* maintenance allowances must be added. This is an expensive business and only first-class ability justifies it. At the other extreme there should be a definite income limit, varying with the size of the family, above which no scholarship should be awarded before the age of 16.

An important question, at present solved on totally wrong lines, is the number of scholarships to be given. I believe it is usual to attempt some relation between the numbers on the elementary-school roll in any district and the number of scholarships awarded; but the Board's 25 per cent. rule, based on the numbers in the *secondary* school, makes most of these attempts abortive. In the school with which I am connected the number of new scholars each year has dwindled from 30 to 10, drawn from an area having an elementary-school population of some 5000 girls, but of these 75 per cent. come from an area containing only 2000. In the early days we certainly had some unsuitable material, lately practically none, and I am certain more scholarships might have been given recently without reaching the limit of undesirability. I have no other figures to compare with these, but if we may be considered typical of urban districts with few slums and little extreme poverty, I should put the desirable number for us at 20, or 4 per 1000. This seems a small number, but I doubt

if more are capable of a purely secondary education, though I believe there are many who ought to have continued education on more technical lines up to the age of 16. By pure secondary education I mean one in which the ordinary literary or scientific studies play the major part.

Having selected our scholar, what do we find to be her most striking characteristics at the age of 11, after about six years of school life? On the side of the virtues, or what are usually accepted as such, we can reckon ready obedience, anxiety to please those in authority, ambition to get on, and willing work. But to counterbalance these, and to some extent the outcome of them, we shall note a lack of initiative, little self-reliance, and practically no sense of give and take, or of what can only be expressed in the phrase "playing the game." It will be noticed that these are largely defects or negative vices, but there is one positive characteristic that is almost universal and very difficult to eradicate, viz., the attitude of mind that meets every call for common action or mutual sacrifice with the demand, "What'll I get out of it?" Now these "virtues" and "vices" are the product of environment, and, to a large extent, except the last named, of school conditions. When a teacher has to deal with groups sixty in number, she is bound to do, not what is right, but what is possible. She cannot be expected to encourage energy or independence, much less initiative; in pure self-defence she nips ruthlessly the earliest evidence of these qualities. For the lack of sense of fair play the entire absence of proper games in the elementary school is largely responsible; though there are also social and economic forces at work to which I need not do more than refer.

This being the material, how can the secondary school best handle it and fashion from it such a citizen as shall be worthy of England? First and foremost, we must be given time, and, in my opinion, the minimum is five years. Unless the parents are willing for the child to continue at school up to the age of 16, they should be discouraged from taking up a scholarship at all. We must have at least two years of adolescence if we are to make any permanent stamp on the character of the child. I usually find that parents can be induced to recognise this, and that a detailed description of the new studies her daughter is going to begin is sufficient to convince the most ignorant mother that it would be useless to send her for two or three years "to finish." It is interesting to note how the idea of "a finishing school" for a girl lingers from Victorian days in the mind of many a working-class woman. Secondly, it is no use thinking

that arrangements which have worked admirably for years for the middle-class girl are going to be sufficient for our new problem. The high school has been able in the past to count on cultured homes for half its pupils, material comfort and healthy surroundings for all, manners that were at least superficially those of gentlefolk were common, the school had little need to concern itself with these more than occasionally. But with the county scholar many, or most, of these things are lacking, and the school must provide them.

I am somewhat inclined to think that the ex-elementary-school girl is best in a school where she forms a large proportion of the whole, not too large a fraction, for she has much to gain from a mixture of classes. (So also has the girl of better breeding and a softer life from her poorer, but often keener, schoolfellow.) In a school where there is but a small number of these scholars, there is less opportunity open to them of leadership and initiative, such positions going inevitably to the girls whose training and traditions make it easy to them. I would suggest that from 50 per cent. to 60 per cent. of ex-elementary scholars makes a satisfactory proportion.

Of efforts we have made to develop the latent qualities of these girls the most important is self-government. We have school-prefects responsible directly to the head-mistress for all out-of-school discipline, and form-prefects (even among the 8- and 9-year-olds in Form I.) responsible to the form-mistress. These girls, chosen by their school-fellows, know that they can make or mar the tone of their form or of the school. This self-government is no sham affair, with a rule or a mistress round the corner; the school prefect's power is as great as that of those of our great public schools, greater in some ways, for in a school but ten years old she has little tradition to hamper, but one to make. The necessary qualities for such leadership as this have to be fostered, nursed, encouraged constantly, never snubbed, even when mistakes are made; and this means not only work, but work which is new to many of our secondary school teachers. A girl who has been trained through five or seven years to think for others, to co-operate with others, to control others, and from whom initiative is constantly demanded, does not lack energy or independence. She has also gone some way towards learning to judge by some other standard than the query, "What will I get out of it?"

Next in importance to self-government I place games, without which I doubt if it be possible to teach our school honour and fair play. To any teacher who doubts the magic force of games in this matter I only say:

"Watch the upper third in September on the net-ball court, and then again in June." And the lessons learnt on the field are carried over to the class-room and the home.

Having attended to the defects of character, what can be done to meet the difficulty of obvious social differences in manner, dress, speech, etc.? There is one simple way out of the dress difficulty, viz., make the drill dress the universal wear in school hours. At once the most striking of class distinctions, most striking, I mean, to the child, vanishes completely. By this simple rule you banish all rivalry in frills and furbelows, you accustom the girl through long years to a comfortable and simple dress, and at the same time drive home constantly the necessity for neatness, cleanliness, and suitability at all times. As to manners and speech, every member of the staff must be ever on the alert, and criticisms must be fearless and open—if pleasantly or even jokingly made they are not resented. One virtue I greatly cherish in the scholar, she rarely is intentionally rude, however uncouth her manners—the covert impertinence of the better-class girl is unknown to her; how much this means in the discipline of the school every teacher will recognise. Social life must be developed to the utmost, every excuse seized for little functions, evenings where the girls definitely entertain each other, careful arrangements for proper hospitality to visiting teams, besides big days like Speech Day, Sports Day, and Old Girls' Meetings. One must not assume that they know how to receive or amuse a guest, they very emphatically do not; but they are quick to learn if told, above all if it is made a subject of school pride that "we do these things properly."

Lastly, the school takes control of the entire life of the girl outside her home door. Street behaviour and conduct in public places is as much our affair as that of the playground. It must be remembered that in this matter we have to revolutionise the tradition of the home, but I can pay a very sincere tribute to the sense of working-class mothers who are ambitious for their girls. Most of them recognise the undesirability of the streets as a place of amusement, though on their own authority they may not dare to veto their daughters' desires; consequently they are only too glad of school support. True, the parent who encourages her girl of 15 to "walk out" with "her boy" does exist, but she is less often the mother of a scholar than of a fee-paying pupil. I think I may claim that the force of public opinion and the very outspoken comments of the senior members of the school confine the practice to a very small number and those of negligible influence.

And what are the results achieved? How far may the county scholar be said to justify her existence? Writing with a nearly complete list before me of county scholars who have passed through our school since 1905, I judge that not more than 10 per cent. may be regarded as failures, and this percentage tends to decrease, since in the early years the method of selection was less good. About 70 per cent. have attained the level of the average secondary-school girl or higher, leaving 20 per cent. who, I think, have benefited much by their four to five years with us, though they would probably have done better at a good technical or commercial school. Of the 98 scholars in the list I find there are 21 (these are included in the 70 per cent. mentioned above) of the mental calibre equal to securing a university degree, and a few, perhaps not more than three or four, who are either brilliant or original. So much for the purely educational success achieved; it remains to examine the after careers of these girls. Out of 175 scholars sent us in ten years, 77 are still in the school, leaving 98, or roughly 100, whose careers can be examined. Of these 42 either are, or are preparing to be, teachers in elementary schools, all except two or three taking a training college course; seven are at a university preparing for degrees, four of these in honours; two are studying for domestic science teaching; one for gardening with a science degree. This makes above 50 per cent. who are adopting teaching in one form or another as their life work. Only two, so far as I know, are married, but none are yet 25 years of age. There are 13 clerks and 16 of whose doings I have no accurate information; some of these are quite likely to have taken to office work. Only four definitely left school to be at home, and the remaining 11 are divided in ones and twos among the following occupations: art, music, the stage, dancing, and florist work. It will be seen that teaching is almost the only real opening for these girls, who must be earning their living by the time they are 20. This makes a serious difficulty in the case of a girl not adapted to that profession, for office work is, except in isolated cases, the worst fate we can offer her; but the question of careers for girls would require a long essay for discussion.

What we claim for our county scholar is that her five to seven years with us have qualified her to take her rank as a self-reliant, self-supporting woman, with a sense of civic duty and a mind sufficiently prepared to enable her to learn to appreciate the finer and less material side of life. Of course, how far along the path of culture she goes varies greatly; the best material can hold her own anywhere in

manner, speech, taste, and dress. Many seem incapable of dropping entirely the traces of early surroundings; but none the less life has been made a bigger and fuller thing, the horizon has stretched far for them, and at the same time they have been so trained that few cannot earn the means to satisfy their new demands on existence. But for the county scholarship these lives would have been cramped and chilled, their potentialities wasted, to the permanent loss of the nation.

THE TEACHING OF ELEMENTARY PLANT PHYSIOLOGY.

By E. STENHOUSE, B.Sc. (Lond.).

Associate of the Royal College of Science, London.

THE confusion of students' ideas on the fundamental principles of plant physiology, which is specially mentioned in the last report of the Cambridge Local Examinations, is unhappily familiar to most teachers of botany. It is probable that the strangeness of the terms assimilation, transpiration, and respiration is chiefly responsible for the difficulty. They have no very precise etymological significance, and it would be a help to all concerned if they could be discarded. In the meantime, pupils must learn that respiration means breathing, carbon assimilation means food-manufacture, and transpiration is roughly the same as perspiration—a word (equally inadequate) which they all understand.

Of the three plant functions mentioned, respiration is the least marked, but is the most easily understood, because it corresponds to a familiar human process. The study of it is best preceded by simple experiments—such as the following—on the differences between the air breathed into and that breathed out of the human lungs. The first is, of course, the ordinary air of the room. It plainly contains enough oxygen to support the combustion of a taper, and so little carbon dioxide that it turns lime-water milky but slowly. Invert a gas jar full of water in the pneumatic trough, and replace the water by air from the lungs, blown through a glass tube. Shake up a little lime-water or baryta-water in the jar, note the immediate milkiness, and *afterwards* test with a lighted taper, the flame of which is promptly extinguished. It should be made clear to the class that the extinction of the flame proves only that air from the lungs contains insufficient oxygen to support the combustion of the taper. The experiment shows that in the lungs the air loses some oxygen and gains some carbon dioxide. It is this exchange (in this case taking place in the lungs), and not the passage of air along the windpipe, which constitutes respiration or

breathing in the scientific sense. A similar exchange, caused by any living thing, whether animal or plant, is true respiration.

Respiration, thus understood, may be easily shown to accompany the germination of seeds or the opening of buds. Two similar small bottles with wide mouths (preferably stoppered) are required. A capacity of 100 c.c. is sufficient. Cover the bottom of each bottle with damp cotton-wool, and on this place in one (A) two or three dozen seeds—wheat or barley grains answer excellently—which have been previously soaked in water for three or four hours. The other bottle (B) is left without seeds. Stand upright in each bottle a small test tube or ignition tube containing an inch or so of clear baryta water, put in the stoppers, well smeared with vaseline, and set aside for a day or two. Without removing the stoppers it may then be seen that the baryta water in bottle A (after careful shaking) is distinctly more milky than that in B. Since at the beginning of the experiment the bottles contained similar air, the seeds must have given off carbon dioxide. After this observation has been made, remove the stoppers in turn, and at once plunge a lighted taper into each bottle. In A the flame is extinguished immediately; in B it continues to burn. Evidently the air in A does not now contain as much oxygen as that in B. The germinating seeds have plainly used up some of the oxygen in the air surrounding them, and have given out some carbon dioxide. In other words, germination has been accompanied by respiration. A similar result may be obtained if opening buds, or other parts of plants where active growth is going on, be substituted for the seeds in bottle A. Conversely, it may be shown that if respiration be prevented by the absence of oxygen, germination will not take place.

In all work in plant physiology the importance of the "blank" or "control" experiment should be insisted upon. The argument is that if only one condition of an experiment is varied, it must be the cause of any difference in the result. Thus, in the foregoing example, the presence of the germinating seeds is the only possible explanation of the observed changes in the air.

Carbon assimilation (better called photosynthesis) has nothing to do with respiration, but is concerned entirely with the manufacture of food. The fact that in this process also an exchange of carbon dioxide and oxygen takes place has given rise to the mischievous idea, so often held by careless students, that it is a kind of breathing, peculiar to plants, in that its effect on the air is exactly the reverse of that of ordinary breathing. Evidently it is

important to emphasise that the carbon dioxide taken from the air is one of the materials which the plant uses for food-building. Beginners understand more easily that a gas can furnish material for plant-food when they have seen black carbon separated from carbon dioxide, and similar carbon making its appearance in any part of a plant which is heated strongly. It is well to insist on the fact that the materials a green plant obtains from the soil and the air are not food, but substances used in making food. To the question: "Whence do the roots of a plant obtain their food?" the answer is not "The soil," but "The leaves."

It is convenient to consider the formation of starch as evidence of carbon assimilation in leaves, but senior students should understand that starch is in any case only one product of carbon assimilation, and is not formed in certain families of flowering plants. To test for starch in a leaf, boil the leaf in water for two or three minutes, immerse in alcohol until the chlorophyll is removed (so that any blue formed in the next stage may not be masked by the green of the leaf), and then put into iodine solution. Any part of the leaf containing starch will become blue or purple. There is an almost indefinite choice of leaves suitable for the experiment, and elder leaflets, among others, are excellent. Xerophytic leaves do not give good results.

The special conditions of carbon assimilation are (1) exposure to light of a suitable intensity; (2) the presence of chlorophyll in the leaf or other part concerned; (3) a supply of carbon dioxide as the source of the carbon. A supply of water is, of course, an invariable condition of activity in all living things. Nothing in the school curriculum furnishes a prettier material for logical reasoning than the experimental proof of the first of these conditions, and good students appreciate the strictest limitation to inferences legitimately drawn from the results obtained in the experiments. A leaf, A, and a neighbouring leaf, B, are removed at the same time from the plant, after several hours exposure to bright light. A is at once killed by boiling; B is kept (alive) over-night in a box with wet blotting paper. The iodine test shows that A contains starch. We cannot test B for starch without killing it, but since B has been under exactly similar conditions as A up to the moment of removal from the plant, it is safe to assume that B also contains starch when shut up in the dark. Killed and tested with iodine after, say, eighteen hours in the dark, B is found to be free from starch. So far, it should be noticed, the experiment has not given the slightest evidence that light is necessary for starch-

formation. We are merely justified in saying (a) that the leaf contains starch after exposure for several hours to bright light, and (b) that a living leaf containing starch loses the starch when it is kept in the dark for a certain time.

Now that we have learnt how to obtain a healthy leaf free from starch, we are in a position to test various surmises as to the conditions under which starch is formed in a leaf devoid of starch.

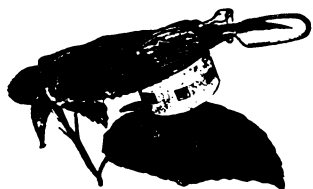


FIG. 1.—Ganong's normal light-screen.
(By courtesy of Messrs. A. Gallenkamp and Co., Ltd.)

To cover part of the leaf on both sides with cork, cardboard, or tinfoil, would be obviously to exclude not only light, but air as well. The best arrangement for excluding light whilst admitting air is Ganong's light-screen (Fig. 1). This consists of "a piece of tinfoil cut with a pattern and then attached to a glass which is pressed against the upper surface of the leaf, tinfoil down; the lower side of the leaf is darkened by a small box,

If we wish to find out whether light is necessary, we must expose part of a starch-free leaf to light, whilst keeping the rest of the leaf in the dark, but otherwise under similar conditions.

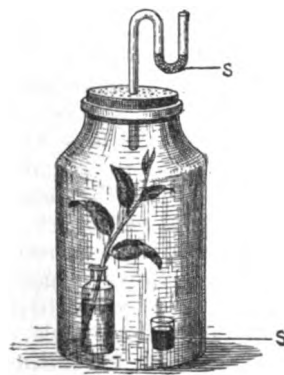


FIG. 2.—Experiment to prove that leaves do not make starch unless the air with which they are supplied contains carbon dioxide. The air in the bottle is quickly deprived of its carbon dioxide by the caustic soda solution in S', and any outside air entering is similarly modified by the lumps of soda lime in the tube S.

received light, but none in the darkened areas. The result finally justifies the inference that light is necessary for starch-formation in leaves.

The necessity of chlorophyll is conclusively shown by the absence of starch from the white areas of a "variegated" leaf and its presence in the green parts, after exposure of the leaf to bright light. Finally, the need for carbon

dioxide is shown by exposing to bright light a starch-free leaf surrounded by air deprived of its carbon dioxide. In such circumstances no starch is formed. The arrangement shown in Fig. 2 may be used for this purpose. A simplified form of the experiment is to lay on its side such a bottle as that of Fig. 2, containing a 10 per cent. solution of caustic soda or potash to the depth of an inch, and to arrange a large, thin, starch-free leaf (*e.g.*, primrose) between the halves of the split cork so that part of the leaf blade is inside the bottle, while the stalk and the rest of the blade are outside. The leaf-stalk should dip into water during the experiment.

The liberation of oxygen during the process of carbon assimilation is not easily shown experimentally, except with water weeds in the manner illustrated in Fig. 3. Elodea is excellent for this purpose. Since the volume of oxygen cannot exceed that of the carbon dioxide used in assimilation, the best results

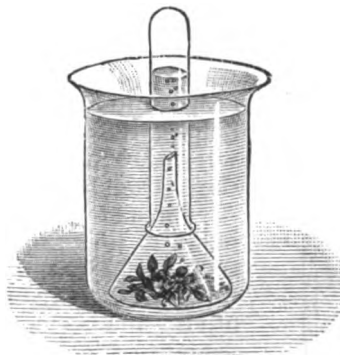


FIG. 3.—Experiment to prove that green leaves supplied with carbon dioxide, and exposed to sunlight, give off oxygen gas.



FIG. 4.—Experiment to prove that green leaves, exposed to sunlight, give off water.

are obtained with water previously saturated with the latter gas.

The solutions of mineral salts absorbed by roots are very dilute. It follows that in order to obtain the requisite amount of mineral matter the plant must take up an excess of water. Transpiration—the giving off of excess water in the form of vapour through the stomata of leaves and herbaceous stems—is therefore necessary. The occurrence of transpiration may be shown in many ways. One satisfactory method is to cover with a dry bell-jar or inverted tumbler a leafy shoot passing through a hole in a card and dipping below into water (Fig. 4). The chinks between the stem and the card are made up with plasticine or soft wax. Obviously the dew which forms on the inside of the tumbler, when the arrangement is exposed to bright light, must be the condensed vapour given off by the leaves. The rate of transpiration naturally varies widely according to the

¹ Ganong's "The Teaching Botanist." (New York: The Macmillan Co.)

specific and individual characters of the leaves, as well as the temperature, humidity, and stagnation or otherwise of the air, and other factors. The rate in a given potted plant may be measured by covering up the pot and soil with sheet rubber, which is tied or cemented (with rubber solution) to the stem so as to form an air-tight joint, and weighing before and after the experiment. The loss of weight represents the water transpired.

Transpiration experiments on leafy shoots cut from the plant are often more convenient, but—owing to the artificial conditions—are less likely to yield normal results. In all such cases, the end of the severed twig should be cut off under water immediately before the experiment, and, if possible, kept under water whilst it is fixed into the vessel to be used. An easy exercise is to arrange such a shoot

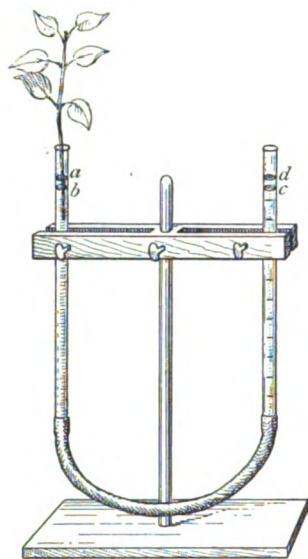


FIG. 5.—Simple potometer. For explanation, see text.

dipping below the surface of water in a bottle and (after putting in the shoot) to cover the surface of the water with oil to prevent evaporation. As before, the loss in weight measures the transpiration. A small spring balance, to which the bottle may be hung by a wire, is often more convenient than a beam balance for such work. Forms of potometer, by which the volume of the water transpired may be measured, are numerous. A simple one, which is very easily made, is shown in Fig. 5. The shoot is put in the water and a layer of oil (*a b, c d*) afterwards added in both tubes to prevent evaporation. The shoot is fixed in its tube so that it cannot shift its position during the experiment, and the level of the water in this tube is marked (*e.g.*, by a label), while that in the other tube (which is graduated) is noted on the scale. After exposure of the shoot to bright light for the time of the experiment, the graduated tube is raised sufficiently to bring the water in the other tube to its original level as marked by the label, and the loss is read off by the scale of cubic centimetres. The outlines of the leaves used in such experiments may be traced on squared paper, and their area, and consequently the

rate of transpiration per unit area, estimated. It should be remembered, however, that the result applies only to the individual specimen, under the particular conditions of the experiment.

Although respiration, assimilation, and transpiration are distinct functions, they are mutually dependent. Leaves obtain, from their own assimilation, the oxygen required for their respiration (and, in the case of marsh and bog plants, that required for the respiration of the roots as well). It has been pointed out that without transpiration the salts could not be raised in sufficient quantity to the leaves for the making of certain foods (amides, etc.). Thus, even the most unfortunate xerophytes cannot safely cut down transpiration indefinitely, lest starvation prove a worse evil than drought.

PRIVATE SCHOOLS IN THE NORTH OF EUROPE.

By J. S. THORNTON.

[As this paper was intended for Dr. Monroe's "Cyclopædia of Education," quite unusual pains were taken to secure its accuracy. Such pains would scarcely have been possible, had I not then been making a lengthened stay in the University of Uppsala, where I had frequent opportunities of meeting an accomplished friend of long standing, one of the five members of the Higher Council for Schools (*Öfverstyrelse för Skolväsendet*), which is the supreme authority for schools of every kind in Sweden. The paper was also submitted to a Norwegian friend of equally long standing, who had been one of the seven members of the *Undervisningsraad*, which is the supreme authority for secondary schools in Norway. Both of these friends gave ready assistance in making the paper as accurate as such a brief statement can be made. This is but one instance out of very many, extending over fifteen years at least, in which I have made large draughts on the learning and never-failing kindness of Dr. Lagerstedt and Prof. Anderssen. But the paper did not reach Dr. Monroe in time for more than a central fragment of it to be inserted; and it is with his hearty concurrence that it now appears here in its entirety.]

IN Denmark and Norway, in Sweden and Finland the private schools are of especial importance and influence, more particularly as regards secondary education.¹ In all these countries the State-leaving exam-

¹ Only in Denmark, of all these countries, is the private elementary school of great importance. There the influence of the *Grundtvigian Friskoler*, which receive some slight support both from State and Commune, has been of great importance for the ordinary elementary school. See p. 134 of vol. xvii. of Special Reports.

ination, which is passed at or about the age of eighteen, is the only portal to the University. Candidates are prepared for it either (1) in State schools, in municipal schools, and in recognised private schools, or (2) in schools which have not gained or perhaps have not sought recognition, in private courses, and by private tuition. In the latter cases they are called privatists, and are subjected to a somewhat severer test.

There is also in Denmark, Norway and Sweden but not in Finland a minor leaving examination intended for those who leave school for business at or about the age of sixteen. This also is an examination for which the State is responsible; and candidates are prepared for it in precisely the same ways as those mentioned above. The completer schools prepare for both examinations; but such schools are exceeded in number by those that prepare for the lower only. These latter are called Realskoler in Denmark and Sweden; and Middelskoler in Norway.

These two leaving examinations are the medium by which the recognition of private schools is effected. If, in buildings and equipment, in curriculum, efficiency of staff and in salaries, a school reach a satisfactory standard, it is allowed to hold the leaving examination within its walls, just like a State school; and its masters, in the presence and under the guidance of a government-appointed censor from outside, conduct the *viva voce* part of the examination (a specially interesting and important feature in all these countries); whereas privatists have their examinations both written and oral conducted by an examination-board who are strangers to the candidates. Such private recognised schools are regarded as helping to make up the national provision of secondary education; their statistics are found alongside those of the State schools; masters or mistresses from one kind of school easily pass into the service of the other—from the private school to the public or (less frequently) from the public to the private; and not unfrequently a teacher may be found engaged in both kinds of schools at the same time. Teachers from a public school are as often as not found acting as government censors at the examinations in a private school; and, just as often, teachers at a private school act as government censors at a public school.² Thus the two kinds of school are perpetually acting and re-acting on one another, to the good of both; each tends to impart to the other its characteristic virtues and excellences; and the two, by varying

methods, work harmoniously and effectively towards the same goal—are indeed, so far as it is desirable, welded into one.

This recognised private school, for which no suitable name has yet been devised, is sometimes the property of a company, but much oftener of a private individual. "A private school may be the best or worst of schools; but recognition is a winnowing process that leaves little but grain behind. . . . Such a private school can come much closer to the home than the communal school; it has a greater expansive force and can penetrate to nooks and corners of the land to which neither State school nor municipal school can hope to come; and through its greater freedom (which is, after all, only a relative freedom) it possesses the lion's share of new plans, ideas, and methods which, after due trial, pass into general currency. It is neither private nor public, but a strong blend of both. It is public because it passes a public test and conducts its pupils by graded steps to the common goal to which the State schools are proceeding. It is private because it generally belongs to a private individual, who has the appointment of his own staff and can make of his school an ordered effective unity, and is in the thousand and one details of school life tied down much less than usual, to a prescribed routine."³

When one considers how large and controlling a factor this particular kind of school is in the educational work of these countries, and when one further considers what an indispensable contribution it makes to the *regeneration and vivification*⁴ of the public schools and of education in general, it seems astonishing and almost inconceivable that this particularly interesting institution, peculiar to these countries in the north of Europe, should as yet have won so little attention and appreciation from the educational students and thinkers of England and America, of France and Germany. It is a striking proof of the comparative ignorance that reigned, in England at least, even among experts, with regard to the history of education whether at

³ This passage is extracted from the Scandinavian portion of the Report of an Inquiry into the Conditions of Service of Teachers in English and Foreign Secondary Schools. Published in 1910 by Messrs. Geo. Bell and Sons, but now out of print. Price 2s. This inquiry was instituted by the Association of Assistant-masters (A.M.A.)

⁴ This passage, to many, may seem extravagant and exaggerated. But see pp. 61-65 of vol. xvii. of Special Reports. It is not meant, of course, that all private schools exert any appreciable influence of this kind. There may not be one in twenty that does. But somewhere out of the freedom of the private school, often from some hitherto unsuspected and perhaps despised source, arises the particular plan, the new device, the fruitful ideas, the fresh departure that the other schools are thirsting for, and (in some cases) utterly unable of themselves to supply. Thus, to take an English instance, a comparison of dates will clearly show that it was a private school at Birmingham, kept by the Hills, that gave Dr. Thos. Arnold the monitorial system with which he regenerated public school education in England (see an article by Thomas de Quincey on the Hills, published in 1824, and reprinted by Prof. David Masson in vol. 14, pp. 9-25 of his Edition of De Quincey's works.) Moreover, it must not be forgotten that in the correcter nomenclature of the Continent the so-called "public schools" of England are ranked among *private schools*.

² This, however, is not the case in Sweden and Finland. The arrangements there in this particular are very different, as will be seen on referring to pp. 3-6, vol. xvii. of Special Reports (as regards Sweden), and to p. 26 as regards Finland).

home or abroad, until Dr. Sadler in 1897 began to issue for the Board of Education his Special Reports on Educational Subjects.

For, in Denmark, the recognised private school (or, as the Danes call it, the school with "examination-right") provides nearly three fourths of the entire number of recognised secondary schools; in Norway, nearly one half; in Sweden, the bulk of the higher girls' schools are of this kind; in Finland, the number of pupils in the State secondary schools has doubled since 1880, whilst that of the pupils in private schools has been trebled; and at the same time the 11,000 pupils in the latter are costing the State less than a third of the amount expended by it on the 9,000 pupils in the former.⁵

Prof. Otto Anderssen, himself a distinguished private schoolmaster who has recently passed into the service of the State as Professor of Education in the University of Christiania, may well feel himself justified in his often repeated statement that a due "balance of Schools public and private most conduces to the welfare of the State."

There is perhaps one exception to the want of appreciation shown by the leading countries of Europe and by America with regard to these interesting and fruitful developments in the north of Europe. In 1908 the Board of Education in England, impressed by the recital of the benefits accruing from the diverse yet harmonious educational activity in these northern lands, quietly and almost as a matter of course, instituted a Register of Recognised Schools which should embrace every school, whether public or private, that reached a satisfactory standard. But it took no trouble to acclimatise the plant it had imported. The Board just plumped it down, scarcely took the trouble to plant it, much less to tend and water it, and give it appropriate nurture. A treatment so frosty could only result in the holding aloof of the great body of private teachers; and so, whilst more than 900 public secondary schools have almost mechanically come upon the Register, the number of private schools to be found there does not amount to a score.

This article is an attempt to deal with the features which the higher schools in these four northern countries, so different in government and historical development, have in common. But the points of difference are also numerous, important and highly interesting, and none more so than the extent to which the number and distribution of the schools and the pecuniary position of the teachers are affected by the

method and the amount of the support given by central and by local authority. These points are much too intricate to admit of treatment, however brief, in a short article.⁶ But there is one general statement which results from any close study of these secondary schools in the north of Europe that may here be quoted from the A.M.A. Report: "State schools, municipal schools, private schools—they all have striking faults and characteristic merits, faults that can be neutralised or minimised, merits that can be shared and transferred, only by the fullest and most constant co-operation, a co-operation that may be found realised in no ordinary degree in the north of Europe."

THE TEACHING OF ENGINEERING IN EVENING TECHNICAL SCHOOLS.

BY far the greater part of the engineers trained in this country obtain their technical education in part time courses, generally held in the evening; in many cases where the co-operation of the employer can be secured, classes are attended on one or two weekly periods during the day, leave of absence from the works being granted. In view of the very large number of students, and the importance of the work thus attempted, the recent memorandum¹ of the Board of Education on the teaching of engineering in evening technical schools will be read with interest by those whose duty it is to organise or teach these students.

The problem of arranging a sufficiently comprehensive course of evening study for engineers is by no means an easy task. Owing to the limited time available, specialisation is inevitable even in the earlier years of the course. There are certain fundamental subjects—mathematics, drawing and engineering science (mechanics and heat)—which form the basis of all engineering education, and these should form the subject matter of the earlier classes of the course. In the hands of capable teachers, the treatment of these subjects will tend, in part at any rate, to obviate the effects of too early specialisation.

The memorandum suggests junior, senior, and advanced courses, the total extending over a period of about eight years. Details of these courses need not be entered into here—they will be found to represent what has been carried out in the best of our technical colleges for many years.

Probably the greatest difficulty which the teachers of the first year evening course

⁵ The full statistics are to be seen at p. 30 of vol. xvii. of Special Reports on Educational Subjects.

⁶ See, however, pp. 53, 54, pp. 85-89, and other passages in vol. xvi. Special Reports.
¹ Circular 894.

classes in Technical Colleges have to contend with is the variety of attainments of the students who present themselves. Some are old elementary school boys who have allowed a period of from two to five years to elapse before taking up evening classes; some of this class who possess grit do very well, the rest disappear quickly. Others are from secondary schools, and have had a fairly good education, especially in mathematics, but are deficient in knowledge of drawing and mechanics. There is also an increasing number of students who have attended Junior Day Engineering Schools; generally speaking, such students are well prepared to go on with the work of the course. Remembering the mixed character of the students, the interference of overtime, illness, and to a much less extent than some people believe, amusements, it is by no means surprising to find a drop of 50 per cent. in first year classes at the end of the session. After this preliminary year of weeding out, the drop in subsequent years is much less, and can be accounted for by the limit of capacity of the student having been reached. There is a good deal to be said in favour of what is suggested in the memorandum—the difficulties and hardships, which are experienced in order to maintain courses entailing such exacting calls on those who attend them, furnish strong arguments for the provision of time during the day for purposes of education.

Are employers who will not liberate apprentices from all overtime, not merely on class nights but throughout the winter (this is necessary for purposes of home work and study) likely voluntarily to concede time off during the day for educational purposes? Many firms make this concession, but the effect is to put their apprentices into a more favoured position than others less fortunately situated. There appears to be a case for compulsory legislation.

There are a few debatable points in the memorandum. We note for example that "the study of languages is valuable in relation both to the scientific and to the economic branch, but is also, as a rule, only possible in a full-time course." We are in full agreement with this statement, but should like to ask why the Board of Education opposes so strenuously the teaching of French or German in Junior Day Engineering Schools providing full-time courses on timetables which could easily spare say, two hours per week for this purpose? Possibly the reason for the objection may be found in the undesirability (from the Board's point of view) of qualifying the boys to proceed to higher day courses, or even to attempt University Matriculation

examinations. Certainly the effect of this regulation is to bar such boys from attaining to the higher educational rewards which might otherwise be open to them, and this despite the fact that their attainments and ability ultimately may be such as to put them on the level of any University graduate.

The arrangement of the laboratory work suggested will probably lead to some interesting discussions among teachers. We note that moments are introduced prior to the triangle of forces. Most teachers would reverse this order, and would almost certainly defer any mention of the triangle of forces until the parallelogram of forces had been thoroughly understood. There is also perhaps too strong a tendency to insist on methods of research in elementary laboratory work. *Engineering* comments on this in a leading article on April 2nd. Suggestions are given for more real teaching and fewer, if any, lectures in the earlier years of the course. This will be heartily endorsed by all experienced teachers. There have been too many cases of teachers "having a certain ground to cover" and firing off lecture notes at high speed in weekly instalments throughout the session. This fault is not confined to teachers of engineering; there are many others engaged in the teaching of physics, chemistry and mathematics who might take the hint with valuable results to their students.

The limitations of space forbid further comments, but we cannot close without directing special attention to what is perhaps the most vital point in the memorandum—it is not proposed by the Board to fetter the liberty of the teachers or discourage individuality in teaching. Bearing this in mind engineering teachers will read the suggestions given in the memorandum with considerable pleasure and profit.

The memorandum (59 pp.) has been drawn up with the object of furnishing suggestions to teachers and organisers of schools which provide evening classes in mechanical and electrical engineering. It is not in the least intended to lay down a scheme of instruction suitable for universal application; it is obviously necessary and desirable that there should be great variety both in methods of teaching and in organisation to meet the needs of differing types of students and the varying industrial conditions of different areas. Further, the last thing which the Board desires in making these or any other suggestions is to fetter the liberty of the teachers or discourage individuality in teaching. The object of the memorandum is simply to assist teachers and organisers to work out for themselves the schemes of instruction best suited to the conditions of their classes.

Students who attend for part-time instruction, are usually obtaining simultaneously a manipulative train-

ing in works, and it is mainly with a view to the pursuit of the scientific branch of an engineer's training that they come to the evening technical school. It is, consequently, with this branch that the present memorandum is mainly concerned.

By far the most frequent type of part-time course is that which is conducted in the evening under conditions which contrast strongly with those of full-time courses. Not only is the instruction given to students who have already undergone the fatigue of a full day's work, but the number of hours comprised in an evening course cannot usually exceed one-fifth or one-sixth of those which form a full-time course. Further, the previous education of the average evening student has generally been less than that of the day student, while his opportunities for homework and private study are far more restricted. The scope of an evening course of engineering is thus extremely limited, and it becomes necessary to use great care and judgment in preparing any scheme which shall be sufficiently contracted to bring it within the imposed limits of time, and shall yet be well-balanced, self-contained, and fairly complete within these limits.

Some of the serious disadvantages which have been mentioned as characterising part-time courses conducted in the evening are avoided in the case of part-time courses held during the day.

When it is possible to organise the course on the basis of an attendance of not fewer than eight or ten hours per week, the increase in the time available makes it possible to adopt a curriculum much superior to the usual evening course, with a corresponding advantage in the rate of progress of the student. A further important advantage gained by day attendance is that the student has his evenings free for homework and for further reading.

In order to make time for the adequate treatment of the various subjects forming an evening grouped course, it is necessary to insist on an attendance on three nights per week. Allowing a minimum of two hours per evening, this condition indicates six hours per week as the least amount of time which can be considered satisfactory for a course of engineering instruction. This must be supplemented by time for the preparation of home-work in the student's home.

The Junior Course usually occupies two years, and is intended for boys who leave public elementary schools at the age of fourteen. It forms a general preparation for technical courses of all types, and comprises instruction in mathematics, drawing, science, and English.

The Senior Course occupies normally a period of not less than two years, with attendance on three evenings per week. This is the first part of the curriculum in which subjects of a specialised engineering character are dealt with.

The Advanced Course includes work of a more advanced and specialised character, and normally extends over at least two years. In the larger technical schools its range is extended further, and often embraces work of a very high scientific and technical standard.

A major course will usually extend over not less

than four years, and will generally include senior and advanced courses. Its curriculum will centre round the scientific basis of engineering, and will include the training in mathematics and drawing, which is necessary for sound progress.

Both on account of its greater educational value and also as providing a preparation for progress towards the higher ranks of the industry, the major course is to be preferred for students who possess ability, industry, and ambition. Many men who hold prominent positions in the engineering world to-day owe much to instruction of the type which is provided by such courses.

A minor course will probably be completed in two or three years, so that it will often consist of a senior course only. It will have as its central subject the trade processes or craft in which the students are engaged. Calculations, drawing, and practical work or demonstrations will form the ancillary elements of the course.

In the junior course the ability of the teacher to interest his class and to present his subject in a manner suited to the needs of his students is of the greatest importance. Although a technical training is of great advantage to the teacher even at this stage, good results are attained in many schools by teachers who have had no such training.

Their success is mainly due to their skill and enthusiasm as teachers and to their ability to adapt their methods of presentation to the outlook of their students.

In the senior course the teachers must have had an engineering training in order that they may be able to treat their subjects suitably. It is a great advantage if the instruction in this course can be so organised that a single teacher takes the same students for all subjects of the course. This plan lends itself to the most effective co-ordination of the work.

Teachers in the advanced course will necessarily be specialists in one or other of the branches into which engineering is divided, and will probably confine themselves to their special subjects.

It is found that many engineering teachers fail to secure the best results solely through want of a knowledge of the most effective methods of conducting their classes and presenting their subjects. In order to help such teachers, short courses formed with the special object of giving instruction in the methods of conducting a class have proved to be of the highest value. The teacher who conducts such a course for engineering teachers should himself be an engineer, and should usually have had experience of conducting classes for artisan students. The instruction should consist mainly of demonstrations of the methods to be employed in conducting a class in the subject which is under consideration.

Many men who are engaged during the day in the practice of engineering in some form or another, become the teachers of their younger colleagues in the evening. These teachers are able to maintain a close relation between the theoretical side of engineering and the experience of daily practice, which is of the utmost value. The conditions of their daily occupa-

tion, however, make it necessary for them to gain their experience as teachers in difficult circumstances, and often with little opportunity of discussion with, or advice from, other teachers of their own subject. It is with a view of helping this type of teacher more especially that the detailed suggestions which form the main part of the present Memorandum have been compiled.

The outlines of the courses given in this Memorandum have been constructed to show how a consistent scheme of instruction may be given within the limits of a part-time course. It is not suggested that they form a complete scheme of engineering education, nor even that they are necessarily the best course to be followed under all conditions of evening work. Least of all are these suggestions intended to restrict the thoughtful teacher in the free use of his own initiative and intelligence, and in developing his teaching on his own independent lines. In all teaching, the personality and inspiration of the teacher are vitally important factors, and any syllabuses or suggestions which tend to supersede individual thoughtfulness and initiative must be regarded as a source of danger.

PERSONAL PARAGRAPHS.

MANY generations of Harrovians are experiencing great sorrow at the sudden death of Mr. H. O. D. Davidson. He was a Harrow boy, head of the school, and captain of the football eleven. At Trinity College, Cambridge, he was a scholar, won a Blue in the 'Varsity sports, and took a First in Classics. In 1883, he returned to Harrow as a master, and for thirty years gave to the school such services as few have equalled. He served under four headmasters, and will be remembered especially as a house-master. He succeeded Mr. A. G. Watson in 1891 and did more than maintain the reputation of the house. An old Harrovian, speaking of the character of "Daver's" house, says: "Here abides a memorial of Mr. Davidson, honourable above all praisings, that he sent out into the world so many boys as good men. All who knew him—and that includes every Harrow man from 'forty years on' down to those who have only just left—will mourn his death and wish to express their sympathy to his wife and family in their loss."

* * *

CAPTAIN JOHN RUSSELL POUND, of the 2nd Shropshire Light Infantry, was killed in action on April 28th. Captain Pound was educated at the Merchant Taylors' School and St. John's College, Oxford, whence he graduated with first-class honours in mathematics. He then became a master at Shrewsbury School and was gazetted captain in August last. He was a son of Deputy J. Lulham Pound, who was

for some time on the committee of the City of London School and a Governor of the City of London College. The captain's youngest brother, Murray Stuart Pound, Second Lieutenant in the Queen's (Royal West Surrey) Regiment, died in November last of wounds received near Ypres.

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SECOND LIEUTENANT T. H. WOOD was killed in action on April 13th. Mr. Wood was formerly in the Oxford Officers' Training Corps and obtained his commission in 1914. He was a master at Sherborne, commanded the junior school scouts, and held a commission in the school cadet corps. He had completed a course of training at St. Stephen's House, Oxford, and looked forward to being ordained in the diocese of Southwark.

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SECOND LIEUTENANT T. W. CALLINAN, 8th Battalion Durham Light Infantry, was killed in action on April 25th, near Ypres. Mr. Callinan was a master at the Merchant Taylors' School and his subject was modern languages. He was educated at Durham School and at Queen's College, Cambridge, of which he was a scholar. On coming down in 1905, he became a master at Kingsbridge Grammar School, which he left in order to spend some years in France and Germany. On his return he held a mastership at Bramcote School, Scarborough, going to the Merchant Taylors' School in 1912. There he became a member of the O.T.C., and on the outbreak of war he joined the Durham Light Infantry. He played back for the London Irish, and twice represented London football teams against Paris. His colonel writes: "Up to the time he fell he had behaved most gallantly. He was an excellent officer, and had been of great assistance to me with his knowledge of French."

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LIEUTENANT C. A. GLADSTONE, of the Intelligence Department attached to the Royal Flying Corps, is reported missing by the War Office since April 30th. Lieutenant Gladstone was a master at Eton College and an Eton Blue. He sailed for France in August and joined the Intelligence Department as interpreter. Until November he was employed as a motor-cycle despatch carrier, when he joined the Royal Flying Corps.

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LIEUTENANT WILFRED S. BIRD, 6th Battalion, King's Royal Rifle Corps, was killed on April 9th. Lieutenant Bird was educated at The Grange, Eastbourne, and at Malvern, where he represented the school at cricket, football, and fives, and was head of the school house. He then went to New College, Oxford,

where he captained the Oxford cricket eleven. He was a master at Ludgrove School for eight years, and was gazetted to the 6th King's Royal Rifles in January from the Cambridge O.T.C.

* * *

OFFICIAL intimation has just been made that Dr. Thomas Muir, superintendent-general of education in Cape Colony, will retire under the new provisions as to age-limit at the close of the present month. This will remove from the sphere of active administration the greatest figure in the educational life of our overseas dominions. For twenty-three years Dr. Muir has shaped the educational destinies of Cape Colony, and during nearly all that time has also profoundly influenced educational administration and methods throughout the whole of South Africa. He had enormous difficulties to contend with, but by wisdom, patience, and courage, he won through them all. He leaves behind him an education system that may challenge comparison with the best, and a reputation for just, generous, and sympathetic dealing such as is earned by few administrators.

* * *

DR. MUIR was one of the happiest discoveries of Cecil Rhodes. Shortly after Rhodes became Prime Minister in Cape Colony, he became convinced that the education system badly needed reorganisation, and he looked out for a man of ability and educational experience to undertake the task. His choice fell upon Dr. Muir. Rhodes himself has told us that it was a case of Eclipse first and the rest nowhere. Dr. Muir was at that time head of the mathematical department in Glasgow High School. He had a European reputation as a mathematician, having written the standard works on the theory and history of "determinants." But, doubtless, what attracted Rhodes to him was his reputation for initiative, his disregard of conventional grooves, and his masterful ways.

* * *

DURING Dr. Muir's tenure of office the school attendance has more than doubled and the number of schools has trebled. The supply of trained teachers has risen from 27 per cent., to 60 per cent., and at the present day the teaching profession in Cape Colony, both as regards remuneration and social status, is in a better position than it is in England. The resignation of Dr. Muir is regarded by all classes of teachers, not only as a public, but as a private loss, for the broad human sympathies of the man are written all over the system. All interested in education at home

and abroad confidently expect that the services of this great educational proconsul will be recognised in a signal manner.

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DR. HOPWOOD, Principal and Head of the chemistry department at Tunstall Technical School, Stoke-on-Trent, has been appointed Vice-President and Head of the chemistry and natural science department of the Municipal College, Portsmouth, in place of Dr. Beddow, who has resigned.

* * *

MR. JOHN GILL, Secretary of Technical Education in Cornwall, died early in May. Mr. Gill taught science classes at Helston for many years and then opened a commercial school in the same town. Among his pupils was Sir Thomas Holland, who since his return from India has repeatedly acknowledged his great obligations to his old master. Mr. Gill became secretary to the Cornwall Technical Instruction Committee in 1890, and his work has been greatly appreciated.

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MISS HILDA RICHARDSON, Classical Tripos I. (Girton College), Classical Mistress at the Newcastle-on-Tyne Church High School, has been appointed assistant lecturer in classics at the Royal Holloway College. Miss Richardson was educated at James Allen's Girls' School, Dulwich, and at Girton, where she did some coaching during a year's research work before going to the Newcastle High School in 1913.

* * *

MISS SCHOOLEY, Headmistress of the Twickenham County School for Girls, has been appointed Headmistress of the Secondary School for Girls, Northampton, which will be opened later in the year. Miss Schooley was educated at Aske's Haberdashers' School for Girls, Hatcham, and at Newnham College, Cambridge, where she took the Natural Science Tripos Class I. in 1902. Her first appointment was at King Alfred's School, Hampstead, which she left to go to Bath High School in 1905. Miss Schooley came to London in 1907 as science lecturer at the Clapham Day Training College, and afterwards became a mistress at the Chelsea Secondary School in 1908. She was appointed to the Twickenham County School in 1912.

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MISS ETHEL STEEL, Warden of Bangor University College, has been appointed headmistress of the Royal School for Officers' Daughters, Bath. Miss Steel, who graduated as M.A. at St. Andrew's in 1901, became English mistress at the Rochester Girls' Gram-

mar School, an appointment which she held until 1907. She then went to Miss Easton's School at Paris, returning to England to an appointment at Prior's Field School, Godalming, in 1909. Miss Steel became warden of women students at Bangor in 1911.

ONLOOKER.

THE TEACHERS' REGISTER.

DURING the month of April there was a marked increase in the number of applications for admission to the Register. Whereas on March 11th the total stood at 6,322, the number on April 8th, four weeks later, was 7,803, and on May 13th it was 9,643, an increase of 3,321 since March 12th. This addition was made up mainly of teachers in elementary and secondary schools, the first-named being in the majority, a sign that the vigorous efforts of the National Union of Teachers are proving effectual.

Many teachers in secondary schools have applied as the result of circular letters sent out under the authority of various organisations. Especially valuable was a letter signed by the headmasters of Charterhouse, Clifton, Eton, Harrow, King Edward's School (Birmingham), Manchester Grammar School, Mill Hill, Rugby, St. Olave's Grammar School, Wellington College, Westminster, and Winchester, and by the president and secretary of the Association of Headmasters. This letter emphasises the importance of the council as a representative body of teachers, and suggests that registration should be a condition of appointment to masterships.

The National Federation of Class Teachers has issued an important circular under the title, "Why Class Teachers should Register." Among other reasons it is suggested that as the federation was in part responsible for breaking down the former register and for setting up the present scheme its members are bound in honour to register as speedily as possible. It is further pointed out that all sectional and class distinctions are removed from the present register and that registration is a necessary preliminary to the formation of a real profession of teaching.

The following statement has been issued by the council:—

The Teachers' Registration Council constituted by Order in Council of February 29th, 1912, issued the Conditions of Registration in December, 1913, and has now made definite progress towards the establishment of a register of teachers. This register will be maintained by the council for the purpose of recording the professional qualifications of those engaged in teaching, and the official list of registered teachers, which will be issued regularly, will provide a means of ascertaining the names of those whose credentials have been tested and approved by the council, a body representing every branch of the teaching profession. In order to avoid hardship, it is provided generally that during the first few years admission to the register may be gained on evidence of satisfactory experience alone, but from the beginning of 1921

onwards the register will be open only to those who are able to satisfy the council in regard to their academic and other professional qualifications.

The establishment and maintenance of a register form however, only one part of the work which the council hopes to accomplish. The register itself is but the beginning of a movement towards the promotion of self-government and self-organisation, such as will place the work of teaching on a truly professional basis. To this end the council will take an active part in the development of a considered policy in relation to the preparation of teachers for their work, with the object of rendering it difficult for unqualified persons to engage in teaching. The method of testing the teacher's work, whether by examination of pupils or by official inspection, will also receive attention, and it is to be noted that already it is proposed to give the Registration Council representation on the official advisory body to be instituted in connection with the suggested scheme for the co-ordination of examinations as outlined in Circular 849 of the Board of Education. Matters concerning salaries, pensions, and conditions of work such as are of general interest to all teachers will in due course be considered by the council, and it is expected that this body will furnish an important means for bringing the views of teachers before the public. It is anticipated also that the council will be able to organise systematic research into educational problems and so play an important part in the development of a true science of education, taking steps to make public from time to time the practical conclusions to be deduced from the investigations undertaken.

Already the task of compiling a register has convinced the council that teachers have a large number of interests in common, and that it is greatly to be desired that the work should acquire a higher status in the eyes of the public. The experience of other professions has shown that the first step to this end is the formation of a register of qualified members with power to exclude undesirable applicants and to remove from the register any who are found to have acted in an unbecoming manner. To carry out this policy and to realise the wider possibilities already indicated, it is necessary that the council should be strengthened by the support of all qualified teachers. A single payment of one guinea is the only demand made upon the individual teacher beyond the small sacrifice of time involved in completing the form of application.

The council is confident that teachers will be prepared to enrol themselves without delay when it is realised that to give support to the register is a professional obligation imposed by the necessity for taking steps to improve the position of teaching in relation to other forms of national work in order that the interests not only of the teachers themselves, but of their pupils, may be properly safeguarded. The interests of the community demand that the instruction of the young shall be undertaken only by those who have shown themselves fit for the work, and the proper test of this fitness is one devised and applied by the recognised representatives of the profession itself.

Notices have been issued to the various appointing

bodies inviting them to elect representatives to serve on the council for the triennial period beginning on July 1st. The procedure is laid down in the Order in Council of February 29th, 1912, and the principle governing the constitution may be described as representative in the widest sense, every effort being made to secure that the council shall reflect the opinions of all types of teachers.

PROVISION OF GLASS APPARATUS FOR EDUCATIONAL PURPOSES.¹

IN the past practically all the glass and porcelain apparatus used in chemical laboratories in this country has been manufactured in Germany and Austria. As the supply is now cut off and the stocks held by British dealers are almost exhausted, the problem of obtaining apparatus for educational and technical purposes has become a serious one.

The Joint Committee is informed that efforts are now being made by several firms to introduce the manufacture of glass apparatus into this country, and being in hearty sympathy with these efforts, it has considered in what way the British Science Guild may best assist. In these efforts the committee has co-operated with the Association of Public School Science Masters, and has taken action along two main lines, viz. :—

(a) Endeavouring to obtain assurances of support for British makers of educational glass ware after the war as well as now.

(b) Obtaining information from educational institutions respecting the principal types and sizes of glass apparatus in greatest demand.

ASSURANCES OF SUPPORT FOR BRITISH MAKERS OF SCIENTIFIC GLASS WARE.—It is understood that the efforts during the last three months by certain British glass manufacturers have been attended with satisfactory results as regards the quality of the products. Economic and manufacturing conditions have prevented British glass apparatus being sold at so low a price as has been paid in the past for German material. As these conditions will probably remain unchanged, British manufacturers have been naturally disinclined to expend the necessary capital in establishing the proposed new industry here while there is every likelihood that they will be undersold in the British market by their competitors when the war is over. The Joint Committee is informed that this has acted as a strong deterrent to British glass manufacturers contemplating the production of scientific glass apparatus.

The Joint Committee therefore has endeavoured to ascertain how far it is probable that educational institutions would undertake to buy only British-made glass and porcelain apparatus during the war, and for a period of three years after.

Inquiries were made in this direction by the hon. secretary of the Association of Public School Science Masters, who is a member of the Joint Committee, from the headmasters of all schools represented on the Headmasters' Conference. Out of the hundred and

ten (110) schools so represented, no fewer than seventy-eight (78), i.e., 71 per cent., have definitely promised to authorise their science staffs to purchase, as far as possible, only British-made glass apparatus during and for a period of three years after the conclusion of the war. As these promises have been received from almost all the largest schools, both boarding and day, it may be assumed that manufacturers as well as dealers will receive adequate support from the "conference schools."

The guild also issued about 750 letters of inquiry to—

- (a) Local education authorities.
- (b) Governors of secondary schools.
- (c) Governing bodies of technical institutions.
- (d) Senates of universities and university colleges, and has received a very large number of replies.

The proportion of definite replies coming in at once has been smaller than in the case of the public schools from the fact that various committees have had to be consulted before definite promises could be given, but the replies which have been received have been quite satisfactory—of the definite replies received about 72 per cent. are sympathetic, and promises are given to purchase only British-made apparatus as requested, subject in many cases to the proviso that the increased cost is not prohibitive.

A considerable number of the replies, while generally sympathetic, give no guarantee, the reason being in most cases that the matter rests with a higher authority, such as a county council, or board of governors, from whom no definite reply had been obtained. Some authorities, also, while sympathetic, do not feel able to bind their successors, and one authority suggests that only the purchase of German and Austrian apparatus should be barred.

The endeavour to obtain the value of the apparatus used in such institutions has not resulted in any very precise information, but from the facts before the committee it is clear that the value of such apparatus must at least run to some thousands of pounds.

TYPES AND SIZES OF APPARATUS MOST IN DEMAND.—Inquiries as to the principal types and sizes of apparatus most generally used have been made on behalf of the Joint Committee from public schools and technical schools. It was felt by the Joint Committee that this information would be of considerable value to glass-makers, as there is a very strong feeling among those concerned with the chemical apparatus trade that at the present time flasks, beakers, basins, etc., are supplied in an unnecessarily large variety of shapes and sizes.

Judging from the replies received from the institutions above referred to, the following represent the apparatus most in demand :—

Test Tubes.—6 in. \times $\frac{3}{4}$ in., 2 in. \times $\frac{1}{2}$ in., and, in smaller quantities, 6 in. \times 1 in., 5 in. \times $\frac{3}{4}$ in., and 2 in. \times $\frac{1}{2}$ in.

Beakers.—Squat form, lipped, 200 c.c., 300 c.c., and, in smaller quantities, 150 c.c., 500 c.c., 1000 c.c.

Beakers.—High form, in the same sizes as above, but in smaller quantities.

Flasks.—Flat bottom, 100 c.c., 250 c.c., 500 c.c., and, in smaller quantities, 1000 c.c., 1500 c.c., 2000 c.c.

¹ Being a report issued by the British Science Guild.

Flasks.—Round bottom, 250 c.c., 500 c.c.

Tubulated Retorts.—150 c.c.

Funnels.—6.5 c.m.

Distilling Flasks.—100 c.c., 250 c.c., 500 c.c.

Evaporating Dishes.—50 c.c., 100 c.c., 200 c.c., and, in smaller quantities, 1000 c.c., and 2000 c.c.

Crucibles.—15 c.c. and 25 c.c.

In conclusion, the Joint Committee desires to express its strong conviction that every effort should be made to facilitate and encourage the manufacture of glass and porcelain apparatus in the United Kingdom. It therefore urges the advisability of asking the Board of Trade to watch the new industry, and, if necessity should arise, to use its endeavours to modify any restrictions at present existing which may be detrimental to the carrying on and extension of the industry.

HISTORY AND CURRENT EVENTS.

THE friend who was with us on the journey to Germany a quarter of a century ago, to which we referred last month, says it was in the year 1888 in the spring of which the Emperor William I. died, and was succeeded for only three months by his son Frederick. What would have happened if Frederick had not died thus early to be succeeded by the present Emperor? We know from the memoirs of Sir Robert Morier something of the antagonism in the Prussian royal family at that date, and of the hostility between the English wife of the Emperor Frederick and Bismarck. Would other influences than hostility to Britain have prevailed? Would Bismarck have at least so steered the German ship of state that the present war would have been impossible, or would he have been dismissed for reasons entirely opposite to those for which William II. dismissed him in 1890? And, a final question suggested by these reflections: What is the comparative strength of personal influence and of national aspirations in the conduct of public affairs?

ONE of the first acts of the Emperor Francis Joseph of Austria-Hungary was a personal application to the Tzar of Russia for help against his Magyar subjects. Saxons and Roumanians in Transylvania had already appealed to the same quarter for help against their Magyar oppressors, but it was not until the summer of 1849 that the Russians finally conquered Hungary on behalf of the Emperor and his Transylvania subjects. Francis Joseph is still on the throne which he ascended in that year of revolutions, and has maintained his position by dexterously playing off against one another the mutual jealousies of his heterogeneous provinces. Now he is resisting another Russian invasion of Hungary, and Roumanians, both inside and outside of his empire, are watching with keen interest this phase of the world war. Austria and her Magyar subjects are united against the Slavs and their possible allies. The contrast between 1849 and 1915 helps us to understand the strange complexity of national interests in south-eastern Europe.

THE forces of Germany have not as yet, at least, succeeded in making an effectual invasion of these islands; our Navy has made even an attempt impossible save for an occasional raid. None the less, the war has revolutionised all our ways of thinking, has affected prices of many articles of common consumption, and, above all, has given us illustrations of what a country is prepared to do when its existence is at stake. "Skin after skin, yea, all that a man hath will he give for his life." During the Boer war some fifteen years ago, we learned from our Dutch-speaking foes to use the word "commandeer," but only as the name of something happening far off in South Africa. Now the thing itself has come home to us; factories even are taken over for State purposes, and drastic measures with reference to the use of alcohol are adopted, or at least contemplated, which would have been thought impossible a few months ago. Our constitution is radically altered, and we obey because the Government—the gubernator or steersman—gives commands to us who cannot see whither we are going.

THIS month of June, while we shall all be watching with intense interest the progress of the war in many parts of the world, our thoughts will instinctively hark back to the great struggle of a hundred years ago. There will probably be nothing like a Waterloo campaign, a short hundred days of warfare, but the nations of Europe will be engaged once more in opposing a would-be world conqueror, and that in battles beside which the "Battles of the Nations" of 1813-5 seem to fall into insignificance. The grouping is different, because the common enemy is one which scarcely existed in the time of Napoleon, but the principle for which the Allies are fighting is the same. Whether the world will ever again come under the same unity of government as existed in the time of the Romans is doubtful. But as yet the main desires are not for centralisation; we look rather for the happiness of mankind in letting each nation develop independently on its own lines.

ITEMS OF INTEREST.

GENERAL.

MR. PEASE'S annual statement on the activities of the Board of Education, in the House of Commons on May 14th, dealt chiefly with the way in which the war has influenced the work of the Board during the last nine months. Already 320 members of the staff of the Board have joined the Colours; many of them have received commissions, and the death of some has to be mourned. From the provincial universities more than 50 per cent. of the students have joined the Colours. London University has a fine record. It has supplied through its Officers Training Corps 1,100 officers, and 200 other students have joined, so that 1,300 from the London University have received commissions. From Manchester 149 have received commissions, and from Newcastle 100. Explaining the increases in finance which have been very largely automatic, the President of the Board said that one in

crease is due to the additional feeding of children during the war. Seventy thousand children, or double the number a year ago, are being fed now, and at the outbreak of the war 200,000 were fed. Two things are essential for the future of this country in the opinion of Mr. Pease; the first is that after, and even during the war, an effort should be made to retain longer at school those who are able to benefit by further education, and the second, that the nation should create careers for men who are capable of original work in science, so that both they and the nation may benefit from their natural ability.

In his statement, too, Mr. Pease referred to some of the work done by the Board of Education for our new armies. Classes for the teaching of such subjects as French, ambulance work, and map-making have been opened in the camps. Altogether grants have been paid for 1,250 hours occupied by the troops in those classes. West Sussex heads the list. Many of the men, however, want recreation rather than studies, and the President has been able to satisfy their needs in that respect. As chairman of the Committee for the Relief of Professional Classes, with the assistance of an allowance from the Prince of Wales's Fund, he has found employment for singers and musicians, who otherwise would starve, in the way of entertaining the troops in the camps.

BRADFORD, in Yorkshire, is well known as a progressive city. Its Grammar School and its Technical College have an imperial reputation; the Guild of Help movement had its origin in Bradford; the City Education Committee and its Director of Education are full of resource and initiative. The excellent suggestion that May 11th should be recognised throughout Britain as "Russia Day" was welcomed with particular enthusiasm in Bradford, because the West Riding of Yorkshire already has large business connections with Russia, and it hopes extensively to increase them in days to come. Hence the Education Committee caused a pamphlet to be prepared in order to guide teachers as to the way in which "Russia Day" might profitably be observed. The following are the main features of the scheme. First the Russian flag is displayed, the Russian national anthem sung, and, if possible, articles of Russian origin displayed. Then the head-teacher addresses the assembled school on such general topics as Russian development during the last sixty years, or the community of the interests of the British and Russian Empires, or the part that Russia is playing in the present war. Next, in the separate classes the class-teachers make Russian matters the basis of their lessons. For example, the arithmetic lesson deals with the conversion of roubles to shillings or of versts to miles; or it calculates the difference between the cost of travelling in England and the cost of travelling in Russia, where colonists can obtain for 12s. a ticket which takes them 3000 miles. The teacher of geography treats of the physical features, the climate, and the resources of Russia. The historian traces the expansion of the empire and its internal development, emphasising those parts of the story where Britain and Russia have been in contact with one another.

In order to make it easy for teachers to carry out their part of the programme the Bradford Education Committee prepared a brief bibliography of useful books, and placed an adequate number of copies of all of them in the teachers' reference library. This commendable enterprise is worthy of note, because it forms a model on which other similar national "days" might well be framed. One defect of the British character, and therefore of British education, is insularity. Nothing short of Continental travel could more effectively tend to remove this defect than the concentration of the attention of teachers and pupils now and again on the affairs of other great peoples.

THE London County Council Education Committee is recommending this year the celebration of Empire Day in the secondary schools aided by the council. It is proposed that the ceremony shall take place on June 11th, as in the case of elementary schools, and that a half-holiday shall be given in the afternoon. Headmasters and headmistresses will, we feel sure, welcome this opportunity to strengthen in the minds of staff and pupils a belief in the ideals for which the Empire stands, and to confirm our national determination to uphold righteousness in international affairs.

A REPORT of the Middlesex Education Committee shows that, so far as it has been possible to get information on the matter, 6019 pupils from the elementary schools under the committee's control have joined the Forces of the Crown.

THE Board of Education has published a list of fourteen holiday courses which have been arranged for the coming summer. Of these courses nine are to be held in France: at Grenoble, Bayeux, Caen, Honfleur, Paris, Rouen, St. Valéry-sur-Somme, Versailles; three in Switzerland: at Geneva, Lausanne, and Neuchâtel; one in Italy, at Florence, and one in Spain, at Madrid. The number of courses is necessarily very much smaller than in previous years; those usually held in Germany and Austria are not included in the table, and none of the courses organised by French universities, with the single exception of Grenoble, are to be held this year. The table published by the Board of Education gives the date of each course, the fees, return fare from London, lowest cost of boarding, principal subjects of instruction, address of local secretary, and other details of importance to intending students. Copies of the table (price 1d., by post 1½d.) can be obtained direct from Messrs. Wyman and Sons, Ltd., Fetter Lane, London, E.C., or through any bookseller.

THE Board of Education has also issued in the form of a pamphlet a statement of the particulars of twenty summer courses for teachers in England and Wales for instruction in various subjects of the school curriculum. Among the holiday resorts at which courses will be held we notice Ambleside, Brighton, Falmouth, Scarborough, and Stratford-on-Avon. Other courses will be held at different universities, training colleges, and other places of higher education. Copies of the table can be obtained through a bookseller at the price of one penny each.

THE 1914 report of the Apprenticeship and Skilled Employment Association shows that in common with other bodies dependent for their support on voluntary contributions from the public, the association has suffered already financially as a result of the war, and would welcome an addition to its income. Interesting tables are provided in the report classifying according to trades the numbers of boys and girls placed in employment by the various London committees of the association. During the year 1914 the total number of boys placed was 532, and of these 60 went into office and clerical work, 47 took up mechanical engineering, 41 scientific instrument making, 40 electrical engineering (including wiring), and 34 motor work. Of the 333 girls who were found employment, 93 took up dressmaking, 34 office and clerical work, and 29 machining. The remaining girls were distributed among thirty-four different trades. Full particulars of the work of the association can be obtained from the offices, 53 Denison House, Vauxhall Bridge Road, S.W.

JUDGING from letters which have appeared in the correspondence columns of the *Times Educational Supplement* and the *Schoolmaster*, some teachers in elementary schools want something more than a mere place on the Teachers' Register in return for their guineas. One section of the teachers suggests that "registration should carry with it the right to wear academic costume and an honourable title." One county association of teachers, indeed, is reported to have passed a resolution urging "that admission to the Teachers' Register carry with it a definite title, as bachelor of education (B.E.), and the right to wear academic dress." The letters in our contemporaries urge that this right to wear a gown would soon obtain "substantial increments of salary," "provide armour against non-professional interference," and so on. Evidently they want the expenditure of a guinea to be a profitable investment. But we are afraid that the hopes of higher salaries following the right to wear a gown will not be strengthened by a study of the statistics recently published showing the average salaries of graduates in secondary schools. Perhaps laymen are right when they say that if we teachers really understood the value and possibilities of our work, we should consider "schoolmaster" the most honourable title we could have, and our profession such that it required no trappings to bring its nobility into relief.

At the annual meeting of the Froebel Society on May 5th, Prof. Adams gave an address on the psychology of drudgery. He contrasted two definitions of drudgery; the man-in-the-street thinks of it as doing what you don't want to do, but a better definition suggested was doing what you want not to do. To the psychologist drudgery is work lacking a purpose, and to be successful a teacher must manage to make it clear to his pupils why they are called upon to perform their tasks. The report of the society shows a diminution in the membership, but the balance-sheet reveals a satisfactory financial state of affairs.

THE serious shortage of qualified dental practitioners is commented upon in the *Dental Record* for May. Our contemporary points out that a successful candidate for one of the numerous available senior county scholarships has occasionally selected dentistry as the subject of study, but the number so electing is so small in proportion to the total scholarships offered that the "dental scholar" may at present be looked upon as a *rara avis*. This is regrettable in view of the acknowledged need for an increase in the number of qualified dentists. The authorities making the awards are as ready to acquiesce in a scholar's election for dentistry as for any other profession, and now that county and borough educational authorities are officially employing dentists in increasing numbers it should reasonably be hoped that a little more positive encouragement may be extended to scholars who may possibly become dental officers in their service. Some good might be done if those who feel concerned about the present shortage of qualified dentists were by joint action to make the situation and possibilities known in a suitable way to educational bodies and schoolmasters.

THE five articles in the current issue of *Science Progress* are highly technical, a large portion of the number being devoted to notes and reviews. Dr. Davison's short essay on the prevision of earthquakes will be read with interest by teachers of geography. He defines prevision as an approximate form of forecast, and alludes to the observations made on the slight shocks which preceded the great earthquake of 1891 in Japan; these apparently marked out the fault system which came subsequently into action. It is believed that the increase in seismic activity along a known fault and the distribution of the activity along the fault may be heralds of the great crust movements which cause disastrous earthquakes.

THE Year Book Press, 31 Museum Street, London, have been appointed by the Teachers' Registration Council as publishers of the first "Official List of Registered Teachers," which will be issued as soon after January 1st, 1916, as arrangements have been completed.

SCOTTISH.

THE Scottish universities are promised a sum of £35,000 out of the £145,000 provided in the Treasury estimates of this year to meet the loss of income sustained by universities, colleges, and medical schools owing to the war. The money, it is explained, is meant to give such assistance as will prevent these institutions from suffering serious permanent detriment owing to the temporary emergency. The sum indicated above will by no means cover the loss sustained in fees by the absence of so many students on war service, but it should be sufficient to tide the universities over the present year, and give them time to readjust their finances to the altered conditions.

SIR DAVID M'VAIL, at a meeting of Glasgow University Court, brought forward a motion in favour of petitioning Parliament to modify the curriculum of studies required by the ordinances for graduation in

the case of those who offered themselves for war service. He explained that, while Oxford and Cambridge Universities had full power to modify the curriculum as necessity demanded, the Scottish universities were bound hand and foot by their ordinances. He did not propose that the standard of examination should be lowered, but there might well be a relaxation in regard to the hours of attendance in the case of those who had undergone experience at the front, and had been taught obedience, duty, and forethought under the severest of conditions. He understood that Parliament had already decreed that law students in Scotland were to have the time spent in the Forces of the Crown reckoned as part of their apprenticeship period. The motion was unanimously passed, and a committee appointed to bring the matter in due form before the Government.

At the University of Glasgow the course of instruction in engineering for the B.Sc. degree is conducted upon the "sandwich" system. Under this plan, the laboratory staff is occupied during the six winter months in providing the prescribed lectures and demonstrations for the students. During the months April to October the ordinary students obtain their practical training as pupils in the various engineering works of the district. In summer the laboratories are accordingly employed only for special forms of instruction and for research. This year, at the close of the winter session, we learn from *Nature*, Prof. Cormack and his colleagues—lecturers, assistants, demonstrators, and mechanics—offered their services through the principal of the University to Lord Kitchener for any purpose connected with the production of munitions of war, which he might think fit to indicate. The Secretary of State, through the Master-General of the Ordnance, cordially acknowledged the offer of the staff, and promised speedily to inform the University as to the manner in which it may be utilised to the best advantage. In the meantime, the Admiralty has, with the sanction of the University Court, made arrangements for using the equipment of the laboratories, and in particular of the testing machinery, for the purpose of testing the specimens of steel and other metals employed by the contracting firms who are manufacturing shells, etc. A large proportion of the engineering students, who completed their course at the graduation in April, have found places in the munition factories.

THE senior women students of Queen Margaret Hall have offered themselves in large numbers as probationary nurses in the various infirmaries, while the junior women students were prepared to undertake work in munition or other war factories.

EDINBURGH Continuation Schools have just closed for the year after a record session. The number on the roll amounted to 10,842, as against 3,494 in 1905, when the continuation class system was reorganised. The average attendance for the session was 90 per cent. The increase in grants for the year was £1,009, while there had been a reduction of £648 in expenditure. The remarkable success of the Edinburgh continuation class system had been brought about through

the hearty co-operation of teachers, employers, parents, and the Press.

THE Royal Technical College, Glasgow, since the outbreak of the war, has placed the resources of its laboratories at the disposal of the Admiralty for the carrying out of experimental and testing work. The professors and staff have thrown themselves wholeheartedly into the work, greatly to the benefit of the national cause. The resources of certain departments have been placed at the disposal of a distinguished inventor, who has been working out the solution of an important naval problem. This has been successfully accomplished so far as laboratory results are concerned, and the invention is now undergoing working tests at sea.

IRISH.

ALTHOUGH the £40,000 grant has this year been distributed to the schools without any restrictions as to its use, it is understood that the rules contained in the White Paper issued with the Act controlling the grant are intended to apply in the future, and the Intermediate Board have already forwarded to the managers of schools a form to be filled up and returned by June 15th asking for particulars as to the total number of intermediate pupils between the ages of twelve and nineteen who have made each at least one hundred attendances between October 1st and May 31st, the number and names of duly qualified lay teachers engaged in teaching intermediate subjects at least ten hours per week during the year, and their qualifications. Particulars are also asked as to the lay teachers who do not fulfil the qualifications. By a duly qualified teacher is meant, until the expiration of one year after the establishment of a Register of Intermediate School Teachers, any person over the age of twenty-one engaged in teaching in school an intermediate subject or subjects above ten hours per week, if he has been so engaged for more than two years or is a university graduate, is under contract to receive the prescribed minimum salary, and is liable to dismissal only upon three months' notice in writing, taking effect at the end of a school term. It seems that a headmaster may be counted as a duly qualified teacher if a layman and fulfilling the requisite conditions.

THE Act prescribes that there shall be one qualified lay teacher for every forty intermediate pupils in the Catholic and non-Catholic schools respectively taken as groups, but in view of the shortness of notice given it will probably be found that in many instances it is not possible in the time to comply with all the conditions.

MEANWHILE the Roman Catholic bishops at their spring meeting have repudiated the new rules, and it remains to be seen whether the Government will pay any attention to their protest. They had suggested their willingness to accept a scheme of one qualified lay teacher for every fifty pupils on the rolls of schools under Catholic management taken together, and object to one in forty. But they object still more strongly to the proposed minimum salaries, which have been

raised beyond what were named all through the discussion without consultation with the owners and managers of Catholic schools. They suggest, therefore, that the method of allocating the grant should be altered, and as they were no parties to the rules they declare that the Catholic schools do not accept them. Subject, however, to the fair and efficient working of the schools, the new grant should be used to improve the position of the lay teachers in every way where improvement is needed.

THE Department has issued notice that it will offer in June three teacherships-in-training tenable at the Metropolitan School of Art in Dublin. One will be open to male candidates only, one to female candidates only, and the other without restriction of sex. These teacherships carry with them free tuition and a maintenance allowance of 21s. per week during the session. The examination will be held in Dublin on June 22nd to 24th.

THE Department has also issued an illustrated prospectus of the Killarney School of Housewifery, the object of which is to provide a systematic training in cookery, housemaid's and parlourmaid's work, needlework, and laundrywork, such as would fit the pupils for domestic service or the care of a home. The school year is from August 16th to June 30th, and the number of pupils admitted is strictly limited. Full particulars may be obtained on application to the matron.

WELSH.

SPEAKING at the opening of a new infant school and domestic training centre at Rhosddu, Mr. J. C. Davies, organiser of education for Denbigh, referred to the fact that though there are many flourishing evening technical classes, there is not a single technical school in North Wales. He suggested that in addition to the formation of technical departments in county schools the whole of North Wales should combine to establish a well-equipped and properly organised central school, Wrexham being mentioned as a suitable place. Several other speakers at the same meeting foreshadowed a change in educational policy to meet the new conditions that will arise after the war; there will be less carping at the spending of money on equipment and staff, and more earnestness in facing the competition which the country will have to meet in technical and commercial matters. It is a hopeful sign that people who write and talk about education are beginning to be impressed by the fact that the expenditure devoted to primary education is largely wasted for want of technical upper departments in elementary schools, and of continuation schools possessing some inducement to enter them other than the supposed desire for self-improvement and progress—which is usually conspicuous by its absence in boys and girls of the ages for which they are intended.

CAPTAIN THE HON. HENRY DOUGLAS PENNANT, of the Grenadier Guards, who was killed in action, has left to the Welsh National Museum his collection of trophies, heads, skins, etc.

THE Welsh Educational Conference, appointed to consider the situation created by the communications received from the Treasury with regard to the efficiency of the Welsh University, met on April 16th and 17th. It was decided that no public inquiry should for the present be held, but that a committee drawn from the colleges, the University, and the Guild of Graduates, should be asked to consider what measures of reform, of co-operation between the colleges, and of avoidance of waste and overlapping were possible within the limits of the present charter. It is, however, understood that the Treasury is inclined to insist on more drastic measures, involving a complete reorganisation of university education in Wales.

THE National Eisteddfod Committee has made some changes in its arrangements. The dramatic competition is to take place in the County Theatre, Bangor, instead of in the Eisteddfod Pavilion; the musical programme arranged for last year is to be carried out; the proposed extensive art exhibition is not to be held, though competitors' work will be exhibited, and the slate-splitting competition is to be abandoned.

MR. OWEN OWEN is to retire from the position of chief inspector to the Central Welsh Board, with a pension of £200 a year; his successor is not to be appointed at present, in view of the proposed reorganisation of higher education in Wales. Mr. William Edwards, who retires from H.M. inspectorate of schools, is to act temporarily as chief inspector to the Central Board. Mr. Edwards, who was born at Denbigh, was educated at King William's College, Isle of Man, and Queen's College, Oxford. He took a double first-class in classics and mathematics, and was elected to a fellowship at Jesus. He became an inspector of schools in 1877, and was appointed to the Merthyr district.

THERE were about 400 candidates for three assistant-inspectorships of schools in Wales, out of whom the following were appointed:—Mr. J. E. Jones, headmaster of Cefnmaes Higher Standard School, Bethesda; Mr. S. Glynne Jones, formerly of the Higher Elementary School, Colwyn Bay; and Mr. W. H. Williams, barrister-at-law, of Newport Intermediate School.

THE war turmoil is not to be allowed to prevent the holding of the usual summer courses, which are proving of great educational value to teachers, who find in them an opportunity of widening their outlook, of keeping up to date in their subjects, and of increasing their professional efficiency. At Aberystwyth and Cardigan there are courses in domestic subjects; at Abergelle County School, Barry County School, and Aberystwyth University College, there are courses in manual work and applied art, while the two last-mentioned schools have also varied courses in subjects useful generally to teachers. The Workers' Educational Association, in conjunction with the Welsh University, and those of northern England, holds a course in history, economics, literature, etc., at Bangor; while there are special courses in rural science

and horticulture at Madryn Castle, in Welsh at Pwllheli, and at Swansea in mining, mechanical and electrical engineering. It is also hoped to organise a summer school of social service. It is impossible to give details of these courses here, but particulars may be found in a table issued by the Welsh Department of the Board of Education, and to be obtained for 1½d. post free, from Messrs. Wyman, 54 St. Mary Street, Cardiff.

EUROPEAN HISTORY.

(1) *The Making of Western Europe*. Vol. ii., 1000-1190. By C. R. L. Fletcher. viii+435 pp. (Murray.) 7s. 6d. net.

(2) *Outlines of European History*. Part i. By J. H. Breasted and J. H. Robinson. xiii+730 pp. (Ginn.) 6s. 6d.

(3) *Outlines of European History*. Part ii. By J. H. Robinson and C. A. Beard. ix+555 pp. (Ginn.) 6s. 6d.

(1) MR. FLETCHER in this volume gallantly continues his "attempt to trace the fortunes of the children of the Roman Empire." He does not agree with the late Prof. Seeley, who said, "When I find a man who says he is not interested in history, it does not occur to me to alter history. I try to alter him." Mr. Fletcher prefers to alter, if not the facts of history, at least the method of setting them forth. Often he does not think it desirable to enter into details, but contents himself with giving what may be termed an impressionist view of a period. Now this treatment may be useful in writing small books for the beginner, but when the author thinks it necessary to occupy more than four hundred pages with the history of barely two hundred years, one is tempted to ask for what readers he uses slang expressions to hit off a situation and yet gives such details in the history of Germany and Italy that the story becomes bewildering. If, instead of the multitude of names and dynastic details with which these chapters are often crowded, Mr. Fletcher had stated some of the answers to the questions he propounds on pp. 225 and 296, his book would have been more useful. We would recommend the reader to study first the latter part of this book, the chapters on France, Spain, and the Crusades, which Mr. Fletcher himself remarks have each more of a unity and are therefore more easy of treatment. Then the chapters on Germany and Italy should be grappled with and studied in connection with the very full genealogical tables and maps with which the book is provided. When these have been at least partly assimilated (due notice being taken of the words "perhaps," "no doubt," "probably," and the more outspoken, "we do not know"), the reader will be prepared to understand better the introductory chapter. To one "fault" the author confesses in an extraordinary postscript to his preface. He "lets stand" "the hard things he has written about the Slavonic nations and the high praise that he has given to the efforts of the medieval emperors to destroy or Germanise the Slavs," and this as a "penance" on himself. We are tempted to ask if these "hard things" are true or not true, and if history is to be altered because of current events? The other feature to which we would direct attention is an evident prejudice against Hildebrandine ideas, a prejudice which would explain the absence of any clear setting forth of those ideas and a consequent haziness about the principles involved in the investitures controversy. In brief, this volume, by means of its index, forms a good reference book for the countries the story of

which it tells during the eleventh and twelfth centuries so far as the surface view of events is concerned, and will therefore find its due place on the library shelves of the teacher who needs a knowledge of European history to supplement his ordinary teaching of English history.

We have sometimes wondered how the history of Europe will be told some five hundred years hence, what will be the events then considered most important and worthy of remembrance. Volumes (2) and (3), forming one history in which three professors in United States universities have collaborated, may help to furnish a clue to the solution of one problem. The detachment with which our cousins across the Atlantic have been able so far to regard our European history has very largely the same effect as distance in time. What, then, is the result? Prof. Breasted in some three hundred pages tells the story of early man, of Egypt, Babylonia, Greece, Rome, and the eastern world generally; and Prof. Robinson in some four hundred pages continues the story until the death of Louis XIV. of France. Both are more interested in economics, art, and literature than in the ordinary political history. Prof. Robinson says, e.g. (p. 652): "The battles of the Thirty Years' War are now well-nigh forgot, and few people are interested in Tilly and Wallenstein and Gustavus Adolphus. It seems as if the war did little but destroy men's lives and property, and that no great ends were accomplished by all the suffering it involved." But with the beginning of the eighteenth century Profs. Robinson and Beard feel that they are entering on the history which affects ourselves, and explains the world in which we live. More than 550 pages are devoted therefore to the history of the last two centuries, though even here it is the nineteenth which takes far the greater part of the space. These volumes will be useful, therefore, to the teacher, if not also to the elder pupils, from the point of view from which they are written. But they have other merits. They are abundantly and beautifully illustrated, and the illustrations are as important as the text, for they are accompanied with explanations which often contain much useful information. The only pages which would require re-writing in any future edition of this exceedingly useful work are those numbered 502-4 in the second part, which, written before the outbreak of the present war, take a hopeful view of the prospects of universal peace.

POETRY AND LIFE.

The Poetry and Life Series. Cowper. By J. A. Ray. 182 pp. Marlowe. By J. H. Ingram. 150 pp. Chaucer. By E. W. Edmunds. 219 pp. Walt Whitman. By H. B. Binns. 168 pp. (Harrap.) 1s. each.

THIS series, which has again and again been noticed, is committed to a theory, which in some cases works well. The theory is that a poet's life is of considerable importance, or at least of considerable interest to those studying his works. This is true of Cowper and Whitman; but it is not so easy to see that the mass of scandal and conjecture which do duty for the lives of the other two poets is of any use at all. Writers in the series are distinctly handicapped. But Cowper, whether in his poetry or in his incomparable letters, of which here we have two new ones, is interwoven with what came from his pen. The aim of the series is not criticism, and little new is said about the unhappy poet; but the dreariness of the whole story is well brought out. "Good for this man if he had never been born." A most striking sentence in a new letter in which he says: "I was born to subsist at the

expense of my friends; in that and in that alone, God knows, resembling my Lord and Master," is an intimate revelation of the poet. This and the booklet on Marlowe are dressed in green; originally the series was in blue; the Chaucer and the Whitman are in red. The last colour is the best, and we may hope the binders think so. The Marlowe volume is from the pen of a Marlowe authority, for Prof. Ingram reminds us of his "Christopher Marlowe and his Associates," and he "has the gratification of publishing the only version of the famous 'Come, lyve with mee and bee my love.'" which is contemporary; the gaps in Marlowe's history are eked out in a very interesting way by accounts of school and college life in Elizabethan times; great stress is laid on the "modern note" in Marlowe, but nothing is said of the Shakespearian debt to him. A terrible misprint mars the quotation of the only lines in Marlowe which everyone knows. We think this series is for schools; if so, the Hero and Leander of Marlowe-Chapman fame is "curiosa." We believe schools often read Edward the Second; school-masters choose strange books sometimes. The writer's last paragraph is surely too eulogistic of the ill-fated poet's character; his works are generally not praised highly enough. The Chaucer is as bright as it deserves to be; but the writer seems wedded to the belief that all the poet's twenty-nine companions did actually go on this famous pilgrimage. This is to inquire too curiously. One is glad to see, however, that Mr. Edmunds is not bitten by the desire to belittle the tales by unduly glorifying the earlier work. There is a good suggestion that the prologue should be read over again before any tale is read. Mr. Binns writes well on Whitman, but shirks the real question which with this poet is central. It would be well perhaps to omit it altogether; there is enough in Whitman of sheer poetry-stuff to fill his book. At the present time, too, the beautiful life among the wounded is well worth re-telling. The writer might have made more of the undoubted fact that Whitman, had he pleased, could have written as smoothly as the best of them, without ruining his inimitable pictures; but he did not choose so to do. The extracts are admirably picked out, and the flamboyance of the poet's character is not spared. Even now the day of Walt Whitman as of Shelley has not fully dawned.

RECENT SCHOOL BOOKS AND APPARATUS.

Modern Languages.

Junior French Reader. By E. Renault. viii + 120 pp. (Arnold.) 1s. 6d.—This reader contains fifty anecdotes, each followed by questions on the subject-matter, grammatical points, etc., by an English passage based on the text, and by subjects for free composition. The questions are generally on reform lines, but are often a little technical; the English of the passages for translation is not always idiomatic, and often suggests the hand of a foreigner; and the subjects of free composition often seem to have no connection with the text, and are in many cases quite unsuitable for a "junior reader," especially as no guidance to their treatment is supplied. Thus after an anecdote about Lord Kitchener we find the following subjects: "L'hiver. Bataille à pelotes de neige. Le patinage. Devrait-on imposer les célibataires?" although the anecdote has nothing to do either with winter or with celibacy. Among subjects that seem to us unsuitable at this stage we may mention: "Les superstitions. Les controverses. Etes-vous patriote, chauvin ou cosmopolite? Tracas d'une mondaine. La toilette féminine; ses petits secrets [!]; les change-

ments de la mode." One wonders whether M. Renault has ever taught French to English boys at the junior stage.

French Examination Papers on the Direct Method. By C. L. Freeman. 112 pp. (Oxford University Press.) 2s.—It may be doubted whether this book really supplies a felt want. The best preparation for an examination on modern lines consists in working through a text supplied with "reform exercises," of which there is no longer any scarcity; these can be supplemented, if necessary, by grammatical exercises on special points, for which purpose several books are available. Each of the 101 papers compiled by Mr. Freeman consist of eight questions, of which the first is a passage with verbs in the infinitive, to be rewritten with the verbs in the appropriate tense, the seventh asks questions to be answered in French, and the eighth contains a subject for free composition; the rest are exercises in applied grammar, vocabulary, and word formation. There is no novel feature, and there is less variety than might have been expected. Some of the questions are not very satisfactory; thus "Complétez, en ajoutant un infinitif suivi d'un substantif: Il s'agissait . . ." is likely to lead to error, and questions of the type "Traduisez et expliquez la différence entre 'une ride' et 'a ride,' 'le talon' et 'the talon,'" can only serve to set up associations which are better not suggested. The subjects for free composition are not always well chosen. To tell a pupil to write four sentences on "new clothes" or "cleaning a bicycle" or twelve lines on "a French University compared with an English one," or "the Classic Age in the seventeenth century in France," can produce no satisfactory result.

Paula Dehmel, Das frühe Haus. Edited by C. R. Ash. 82 pp. (Oxford University Press.) 1s. 6d.—These charming short stories of moderate difficulty, carefully printed, and well edited on reform lines, form a welcome addition to the "Oxford Junior German Series," which is under the general editorship of Mr. W. H. David, of Marlborough College. Miss Ash has supplied fifteen to twenty German questions to each section (three to four pages) of the text, as well as exercises in grammar and word formation, but very little in the nature of free composition. There is also a German-English vocabulary. Misprints are rare: we have noticed *barsuss* (p. 17, l. 24), *rechtes* (p. 33, l. 21); *an einander* (p. 48, A. 12), should be printed as one word; *half* (p. 59, C. ii., 4) should be *halft*. Is it necessary to give *Mehrzahl* as well as *Plural*, and *Zeitwort* as well as *Verb*? But these are small points and do not detract from the attractiveness of this acceptable little reader.

Classics.

Pons Tironum. By R. B. Appleton and W. H. S. Jones. 108 pp. (Bell.) 1s.

Fabulae. By R. B. Appleton. 180 pp. (Bell.) 2s.

Olim. By Miss E. Ryle. 53 pp. (Bell.) 1s.

These are three elementary Latin reading books on the direct method. The "Pons Tironum" is a bridge for beginners passing from their first to their second year. It contains a series of reading lessons, many of them illustrated, specially written by the authors, intended to interest and to teach some important constructions, and two sets of Latin exercises based on the lessons; in the first set some sentences are to be completed, and in the second some questions are to be answered. There is also an *index verborum* with the words explained in Latin.

"Fabulae" is intended as an occasional reading book for lower forms. If used by teachers of the

direct method the stories should be told, and not read. They are seventy-nine in number, taken and adapted from a large variety of ancient authors. There are no notes, but an *index verborum* similar to that in the "Pons." The stories (some illustrated) are well chosen and interesting, although in the first *de sagis* there are some gruesome details, and further, our curiosity is roused to know more about the second of the two *viatores* and what he was doing during all the exciting adventures of his companions. On p. 1 (l. 7) read *alter* for *unus*, p. 7 (l. 5) *illuc* for *illic*, p. 12 (l. 6) *severe* for *severiter*, p. 36 (last line) *esset* or *sit* for *est*, p. 78 (l. 5) *capti* for *capta*. The following words have quantities wrongly marked or omitted: *olim* (p. 39), *lecti* (p. 41), *Electra* (p. 46), *Phaëthôn* (p. 50), *jamē* (p. 53), *deinceps* (p. 53), *Tëlemachus* (p. 77), *Cydippēn* (p. 107), *pārēs* (p. 117). Is *curiose* (p. 64) good classical Latin? Why not *diligenter*?

"Olim" is a selection of six plays written by Miss Ryle for girls. They will be useful for the purpose of acting, although they are not all equally successful in making "antiquity" real as the author wishes, and she has not been altogether able to escape from the danger besetting such efforts of modernising ancient life. On p. 9 read *fortē*, p. 12 *illius*, p. 21 *quī*, p. 33 *sanē*, p. 44 *remittimus*, p. 48 *āneō*, and p. 53 *āeriac*. None of these books recognises that the first syllable of *eius*, *cui*, *huius*, *maior*, etc., is a diphthong, and is not the vowel in *hoc* (neut. nom. and acc.) short?

Selected Letters of Pliny. Edited by G. B. Allen. 147 pp. (Clarendon Press.) 2s.—Intended primarily for those reading for Pass Moderations, this edition should also be useful in schools, though only eight out of the thirty-eight letters given will not be found in the little volume by Messrs. Prichard and Bernard already published by the Clarendon Press; so that, except for examination purposes, one can see little reason for the publication of such a similar selection. There is a long and adequate introduction, and the notes are sensible.

Gai-Julii Caesaris. Commentariorum de bello civili liber secundus. Edited by A. G. Peskett. xiii+88 pp. (Cambridge University Press.) 2s. 6d. net.—This addition to the Pitt Press series should provide a welcome change to the eternal "Gallic War" for both schoolboys and schoolmasters alike. And perhaps, with trench-warfare so much in our minds just now, we might find this little volume, containing the famous description of the siege of Marseilles, of more than usual interest to our pupils. There is an introduction, as good as it is brief, and also notes and vocabulary.

English.

A Matriculation English Course. By B. J. Sparks. 292 pp. (University of London Press; Hodder and Stoughton.) 3s.—We like the planning of this book very much, and we like it especially for the practical way in which the author has carried out his excellent ideal. He has, in fact, endeavoured to arouse the student's intellectual interest in the literature of his country, "so that he may read, not only with eye and heart, but also with an awakened critical mind." To achieve this end Mr. Sparks has divided his book into two parts—grammar and composition. The first is not meant to be a full treatise, but it is amply sufficient for the purpose in view. In the second part all the elements of composition are carefully considered, and the method of study, being based upon the reading of widely diverse models, leads to the development of originality rather than of imitation. As a text-book for boys of about matriculation age it appears to us very good indeed.

Composition for Junior Forms. By G. H. Green. 84 pp. (Black.) 1s. 4d.—As a systematic introduction to composition for pupils between the ages of eleven and fourteen, this book could not well be surpassed. The exercises show an amount of thought and care all too rare in books of this kind. The accompanying letterpress is simple and to the point, and the scope is wisely limited to the needs of the children for whom the book is intended. The excellent illustrations are not, as is so often the case, a merely pleasant embellishment, but are made the basis for ingenious and thoroughly practical exercises. It has become a commonplace in our pedagogic jargon that we must "train our children to think." Mr. Green does not use the expression, but he certainly has done his best to translate the ideal into practice.

Practical English Composition. By C. M. Gerrish and M. Cunningham. 310 pp. (Harrap.) 2s. 6d.—This is an English edition of a well-known American book. As usual, with American text-books on composition, it is thorough in its exposition and replete with exercises. It is with its thoroughness of technique that we are disposed to quarrel, not because we object to thoroughness, but because we think that in school teaching interest and originality are of greater importance than technical elaboration. In other words, whatever may be the case in America, the crying need in English schools is to create a desire for natural and apt expression, not to study or even attain to the conventional mode. The authors may protest and say that their book is intended for the very purpose we desiderate. It may be so, but our experience does not lead us to think that their method is suitable for English schools.

English Grammar and Composition. By W. J. Weston. 309 pp. (Pitman.) 2s. 6d. net.—It is a little difficult to know for what kind of student this book is intended. The first half of it is a "grammar," much on the lines which were more familiar a dozen years ago than now; the second half deals with "composition" on a plan curiously haphazard. The order adopted, choice of words, vocabulary, sentence construction, précis, emphasis, punctuation, verse structure, figures of speech, and essay writing, speaks for itself. When we add that the chapter on essay writing is composed of four pages, and that of these one is devoted to a list of thirty-four "subjects," we may be pardoned perhaps for suggesting that the book is not exactly abreast of the modern developments of teaching English.

A Guide to the English Language. Edited by H. C. O'Neill. 455 pp. (Jack.) 5s. net.—In his preface to this bulky volume the editor hopes that it "will be found useful both by the professed student of English, and for ordinary reference and consultation." Without detracting at all from the merits of the book, we scarcely think that professed students of English will find it of any use to them, but it may certainly be convenient for ordinary reference and consultation on the part of non-specialists. It is divided into four parts: the composition of the English language, vocabulary, style, and miscellaneous; and of these the last is not much more miscellaneous than some of the others; for example, the part devoted to style contains five chapters, and three of them are headed: "Synopsis of Classical English Literature," "Folk Poetry," and "Familiar Quotations." It is a book which should be in the office of every local newspaper.

The Children's Rossetti. Junior, 64 pp., 4d. Intermediate, 78 pp., 5d. Senior, 112 pp. 6d. Edited by

E. Jeffries Davis. (Macmillan.)—These three little books, admirably edited and for the most part accompanied by the illustrations of an earlier day, which Dante and Gabriel praised so highly, will introduce the great but half-forgotten poet, the sweetest of all women-singers, to the English school-children. We forget that Christina Rossetti was once named for the Laureateship, and Swinburne's passionate admiration for the psalmist of a religion that he scorned has not kept green a memory that lives mainly for the elect. The editor has done the children a great service; for who better than Christina could write a nursery song or a beautiful lyric, or, again, a narrative poem? Children love beauty in verse; and the Junior Book is crammed with good things from "Sing-song," about which volume there is a great deal said in the family letters. The truth is, that Christina had the unexplained secret that we find in Herrick, in Beddoes, and in the author of "Blow, blow, thou winter wind." It is not melody only, nor metaphor only, nor sympathy, nor the *lacrime rerum*, though all are present. Instances occur everywhere; "Where shall I find a white rose blowing," "My heart is like a singing bird," "A Royal Princess," "Holy Innocents," and even such things as the alphabet and tables are instinct with the poet's sure touch. Her brother said her poems were "seated by the grave of buried hope"; but it is only a half-truth. Goblin market and the baby-songs riot with joy and movement. We wish there had been longer introductions, and we could spare the illustrations that are not Hughes's, and the last Pre-Raphaelite picture in "Goblin Market." Her own illustrations were charming. Perhaps the publishers will bind the booklets together and supply a fuller biography; the life deserves our reverence. It is doubtful if you can do anything with the poetry but learn it and remember it; talk about some of it seems profanation; but this does not mean that it is easy at all; indeed, even her simplest thought runs deep. "Mount with me, mount the kindled stair."

Readings from Historical Romances. Book i., Caractacus to John, 203 pp.; Book ii., Henry IV. to Edward IV., 188 pp.; Book iii., Richard III. to Charles II., 196 pp.; Book iv., James II. to Victoria, 188 pp. Selected and arranged by Walter Higgins. (Harrap.) 1s. each.—This venture is new, and for it the teacher will, we think, have nothing but praise. It must be understood that it is not a collection of extracts from chronicles or histories cut from historical romance. Thus, with many a debt due to publishers for the use of extracts from copyright books, the editor has gone his fascinating way, and we get a kind of novelist's comment on British history. The usual toll is levied on the ballads, on Scott, Kingsley, Bulwer, Thackeray, Drayton, Malory, Ainsworth, Macaulay; but a large number of much less known writers are included, and though a continuous reading may to the critic feel patchwork-like, this need not trouble the schoolboy. The idea behind the venture is capable of much extension, especially when a generous committee will buy for the school library the books from which Mr. Higgins has reaped. Some of the illustrations are admirable, and all are good. The volumes should be welcome to those who love history, and more welcome to those who do not.

History.

The British Empire: Six Lectures. By Sir Charles P. Lucas. 250 pp. (Macmillan.) 2s. net.—In a sense this is a war book. It consists of six lectures delivered before the members of the Working Men's

College last autumn, and intended to be a criticism of the novel German discovery (made since August 4th, 1914) that the British Empire "is a creation of force and fraud, an image with feet of clay, a collection of down-trodden races and communities eager to rebel; in short, an evil in the world which ought to be wiped out." Sir Charles Lucas rightly says that no sane Englishman, no sane neutral, and, he might have added, no sane German in time of peace, ever held this view. But he feels equally confident that even patriotic Englishmen are not so well informed concerning the Empire as they might be, and as they ought to be. He, therefore, in these lectures sketches the history of the Empire, seeks to find the causes of the expansion of England, and then surveys the British Dominions as they exist to-day, and asks their meaning and their use to the people of these islands. In the early chapters he necessarily tells a story familiar to historians; but he tells it remarkably vividly and well, and with a freshness and authority which his unrivalled knowledge of administration in the Colonial Office alone could give. The concluding couple of chapters break new ground, and they provide convincing evidence (except perhaps to Germans in war time) that the British Empire stands for the freedom and advancement of the human race at large. This is a book to be commended most cordially to all who are in search of an introductory study of Greater Britain.

Visual History: a Practical Method of Teaching Introductory History. By Agnes Nightingale. 48 pp. (Black.) 8d.—The basis of this attractive little exercise-book is a series of twenty-three full-page outline pictures which the pupil is expected to study and to colour. The pictures, which are all reproduced from the works of master painters, cover the whole range of British history. The first is Leighton's "Hunters and Traders"; the last is Tanworth Wells's "Pray for me" (accession of Queen Victoria). The outlines are accompanied by brief descriptive narratives and by directions for the colouring. They are further supplemented by numerous illustrations and maps. There can be no doubt that this little book furnishes admirable training both for head and hand.

A Short History of the Sikhs. By C. H. Payne. 248 pp. (Nelson.) 1 rupee 8 annas (2s.) net.—It is an excellent idea of Messrs. Nelson to provide, primarily for the use of native students in India, a series of brief histories of the leading Indian peoples and states written by experienced civilians and other expert authorities. The volume before us is thoroughly well done. It traces the history of the Sikh kingdom established in the Punjab by Baba Nanak in 1469 to its absorption in the British Dominion in 1849. The story, of course, centres round the remarkable career of Ranjit Singh (1780-1839), and the speedy collapse of his empire after his death.

The Tale of Progress. By A. E. McKilliam. 260 pp. (Cassell.) 1s. 6d.—"The study of history," says Mr. McKilliam, in his preface, "tends more and more to become a study of the social, economic, and intellectual progress of mankind." Hence in this book—the fifth and last of Cassell's "Modern School Series of Historical Readers"—he tells briefly and lucidly the story of the advance which man has made in such matters as writing, printing, science, art, commerce, discovery, and invention. Forty-two topics in all are dealt with. They are illustrated by nearly one hundred pictures, eight of which are in colours. Not only school children, but their elders also, will find this a fascinating and informative book.

Geography.

Physical Geography. By P. Lake. 324+xx pp. (Cambridge University Press.) 7s. 6d. net.—Mr. Lake has aimed at supplying a book for older students than those to be found in junior classes in schools. There are three sections dealing with the atmosphere, the water, and the land. Many of the photographs are beautiful as well as illuminating—more especially those showing cloud forms. The section on the atmosphere is unsatisfactory for older pupils; for example, the references to anticyclones (p. 31) ignore the facts concerning the movements of anticyclones from west to east steadily across the southern hemisphere; the consideration of climatic conditions and their explanation in terms of two dimensions only (p. 39, on the effect of heat upon pressure and winds) is awkward and difficult when the older student might be expected to appreciate an explanation in three dimensions based upon the fact that air is fluid; the emphasis laid upon the effect of a plateau upon air temperatures in reference to the Indian monsoon conditions (p. 83) appears to ignore the fact that air temperatures decrease with altitude, and that the actual air temperatures of Tibet are less than 68° F., while the air over the Indian plains records 85° F., and the further fact that the centre of low pressure is not over Tibet but over the north-west of India, with a consequent change in wind direction over the Indian plains. Mr. Lake's generalised temperature diagrams for winter and summer, showing the effect of land and water (Figs. 31 and 32), appear to be far removed from the facts. Assuming that the January diagram is correct, it is surely unwise merely to turn it upside down to show July conditions; the essential facts regarding air temperatures are vastly different south of lat. 30° S. from those north of 30° N., and older students might be made acquainted with these facts by means of maps of anomalous temperatures, such as those in the "Atlas of Meteorology." The geographer will miss from the chapter on shore lines reference to the method of formation of rias and fiords in relation to the effect of submergence upon coast-line features.

Principles of Physical Geography. By G. C. Fry. 151+x pp. (Clive.) 1s. 6d.—This book contains part of the same author's "Text-book of Geography" enlarged and adapted. There are many recent examination questions in an appendix, and reproductions of Daily Weather Report Charts showing respectively cyclonic and anticyclonic conditions. The book tends to produce the fault which is reprehensible in geography, i.e. the ability to explain a technical term by means of words and generalised diagrams without showing evidence of an appreciation of the bearing of the circumstance denoted by the technical term in relation to a co-ordinated grasp of world conditions. Objection may be taken to the use of the word "principles" in the title of the book; "note-book" suggests the contents of the book more suitably. The paragraphs on the monsoons should be revised; the graph of rainfall in a continental area does not represent the facts; and Florida should not be classed with south-west England as an area of temperature range less than 20° F. without commenting upon the difference of latitude between these places.

Rambles in Rural England. By W. J. Claxton. 188 pp. (Harrap.) 1s.—Mr. Claxton knows how to interest his readers, and this book should be used widely as a supplementary reader. From Kent to East Anglia, across the Midlands to the Lake District, through the west to Land's End, and along the south coast to Sussex and by way of the Thames Valley, is roughly the route of the rambles. Mr. Claxton makes

a successful attempt to show England as "the most beautiful country in the world."

Notes on the Construction and Use of Simple Surveying Instruments for School Purposes. By H. Wigley. 35 pp.+diagrams. (Gravesend: Clark.) 1s. net.—Many schools include "light woodwork" in the curriculum, and for them Mr. Wigley has produced a practical book showing how to make and use simple surveying instruments. His hints are suggestive, and teachers will find the appendix on certain manipulative processes useful. The suggested course includes preliminary lessons on practical mensuration.

Mathematics.

A Foundational Study in the Pedagogy of Arithmetic. By H. B. Howell. xi+328 pp. (The Macmillan Company.) 5s. 6d. net.—The basis of this work was a thesis on the psychology and pedagogy of arithmetic. In its present form it contains first a very complete summary of the extensive experimental literature on this subject, and secondly an account of the author's own experiments. The studies which are reviewed are grouped under the headings of genetic, psychological, statistical, and didactical, and in addition to the main lines of inquiry such topics as the hygiene of arithmetic, arithmetical prodigies, transfer and educational types are also considered. The experiments were devised with the view of determining the ability of children in number apprehension and in fundamental processes. The author has made a very useful contribution towards placing the pedagogy of arithmetic on a scientific basis, and teachers in this country who desire to pursue similar researches will find the work a helpful guide.

Co-ordinate Geometry. By P. Coleman. 240 pp. (Clarendon Press.) 4s. 6d.—In writing this text-book the author has taken into consideration the fact that recent changes in school courses of mathematics now render it possible for a far larger number of students to read this subject than was the case in the past. The topics discussed include the geometry of the straight-line, circle, and conics—oblique as well as rectangular and polar co-ordinates being employed—and the final chapter deals with the solid geometry of the straight-line and plane. The only reference to systems of conics is to be found in a single paragraph relating to confocals. In treating such a well-worn subject, freshness of procedure is not to be expected, but we think that the author has succeeded very well in adapting his method of presentation to the class of students whom he has in view. On looking through the book, we are struck by the number of diagrams, the large number of equations with numerical coefficients, and by the examples in which proofs are given of well-known theorems of pure geometry.

A Class-Book of Commercial Knowledge. By E. J. Bailey. 125 pp. (Bell.) 1s. 6d.—This book presents in a very compact and serviceable form those essential facts about commerce which it is desirable that every boy in a community like ours should possess. Even those who have no intention of entering upon a commercial career will probably find themselves none the worse for being familiar with the matters discussed in the second chapter under the title of money and its mechanism. We have here more than a mere bare statement of facts; for, as the writer remarks, commerce has an educative as well as a practical aspect, and he has therefore included some paragraphs relating to the history of the subject and the underlying economic theory. The first chapter deals with bills of parcels and invoices, the third with correspondence and précis, the last with companies, the

Stock Exchange, and similar matters. A useful feature is the inclusion of *facsimile* reproductions of specimens of the most frequently used commercial papers, such as cheques, bills of lading, etc. We may add that the information contained is up to date; the issue of Treasury £1 and 10s. notes and the moratorium being noticed.

Science and Technology.

Second Year Building Construction. By Arthur Dean. xii + 167 pp. (Routledge.) 2s. net.—The matter contained in this book is supplementary to that given in the first year book, and will be found to be exceedingly useful to the systematic student of building construction. In addition to the usual work concerning excavating, sewerage, plumbing, brickwork and masonry, floors, roofs, and carpentry and joinery, the author has added a section dealing with fire-resisting construction. Numerous worked-out examples will be found in the text, and others for practice are given at the end of each chapter. With regard to the many illustrations included, these are excellent, both in drawing and reproduction, and should prove to be a great incentive to good draughtsmanship.

Woodwork for Infants and Juniors. By Ethel S. Morland. 76 pp. (Pitman.) 1s. 6d. net.—A book of some interest to teachers of elementary manual work showing how little children may be introduced on heuristic lines to woodwork, and containing some twenty-eight models in strip woodwork. A similar book dealing with actual attempts at design by the children themselves, instead of, as in this case, giving brief directions for the guidance of teachers, would probably prove of great educational value.

The Geometry of Building Construction. Book 2. By F. E. Drury. 226 pp. (Routledge.) 3s. net.—This book is one of the second year volumes in the "Broadway" series of text-books of technology, and, in its clear and detailed treatment of the elementary problems of geometry confronting the student of building construction and architecture, reaches for the most part the same high level which we have noted in other books of this series. The author recognises that detail is necessary for beginners, and that many processes must be used which will be discarded later as uneconomical; he has thus been able to develop the subject of descriptive geometry in a manner sure to interest the class of students for which the book is designed. In particular, chapters xvii. and xviii. on mouldings, and chapter xxii. on tracery, seem very satisfactory, although both here and elsewhere in the book the figures are often inconveniently far from the text to which they refer. As in many text-books of this kind, there is a tendency towards too prolix a treatment. Rules which are really modifications of one general principle receive separate consideration. This tendency is shown in the treatment of inclined and oblique planes.

Pedagogy.

Handwork as an Educational Medium. By P. B. Ballard. 228 pp. (G. Allen.) 3s.—This is a second edition, which is a new book. The title is rather a misnomer; the book might be called an introduction to genetic psychology. About handwork in its details there is little; about motor activities, school restlessness, sinistrality, stammering, there is much. And all over it is spread an excellent buttering of humour. One would like to retain the author to write clear books on educational subjects; a democratic government, with its eye on the teachers, would give Dr. Ballard one instruction, "Write." Even on the stiffest

pages is clear the child-love, which to so many writers is an unknown land; even as in Mr. Ashbee's polemic on Hamptonshire the child meets a friend. Probably there is no need to fight the battle of handwork; but the telos of it is little understood. Wholeheartedly the author pleads for it; and supplies the theory which finds its detail in Mr. Legge's profusely illustrated "Thinking Hand." It is interesting to come across thirty pages devoted to the connection between sinistrality and stammering; but surely the students of left-handedness admit other causes of the curse apart from an unwise interference with Nature's Benjamins. The psycho-therapeutic Freud, with his strange explanations, as well as the people who have amassed a good deal of evidence, have to be reckoned with. If this is to be the style of our newer educational books, William James is not dead; or rather, like Abel, he lives.

Mothers and Children. By Dorothy C. Fisher. xiii + 285 pp. (Constable.) 4s. 6d. net.—Mrs. Fisher writes not only "as one having authority," but as one having an understanding heart and a wide experience. British parents will learn much from the wise words of this cultured American mother and her occasional comparisons of British and American home life should give rise to a thoughtful revision of standards and ideals. Problems of everyday occurrence are discussed impartially and illuminatingly, and no parent could possibly read these chapters without some profit. We should like to feel that the book will meet with the wide circulation its excellence deserves; but mothers who look after their children entirely themselves have little time for reading, and those who leave their children to nurses very often have little interest in works on child training.

Miscellaneous.

A Short Old Testament History. By Rev. A. R. Witham. 286 pp. (Rivington.) 2s. 6d.—This book is an abridgment of the author's earlier "Old Testament History." It presents in clear and interesting form the Old Testament story, adhering strictly to Biblical chronology. The omission of notes has been too complete; their inclusion on very few points, e.g. on cubit, shekel, would have increased the value of the book to a juvenile reader. Several good plans and maps are given, helping to make it a sound, useful, and interesting book for junior forms on this somewhat thorny subject. It can be recommended with safety and confidence.

New Clothes from Old. By Mrs. T. La Chard. 16 pp. (Evans.) 2d. net.—This pamphlet deserves to enjoy a wide circulation, since everyone is busy trying to meet a demand for clothing, altogether in excess of the supply. Perhaps its value lies in the fact that it sets in order the many vague notions that one has of "renovation," and thus supplies a need that must be felt among the many voluntary workers who are endeavouring to organise workrooms.

Commercial Law: an Elementary Text-book for Commercial Classes. By J. E. C. Munro. Third edition. By J. G. Pease. x + 194 pp. (Macmillan.) 3s. 6d.—We welcome a new edition of Prof. Munro's popular text-book of "Commercial Law." It is twenty-two years since the first edition appeared, and twelve since Mr. Pease prepared the second edition for the press. Since 1903 much commercial legislation has been passed by the Houses of Parliament, especially in the departments of shipping, partnership, and agency. Many important cases, moreover, have been decided in the courts. Hence there was ample room for the new and enlarged edition of this standard primer.

EDUCATIONAL BOOKS PUBLISHED DURING APRIL, 1915.

(Compiled from Information provided by the
Publishers.)

Modern Languages.

"Compositions Françaises d'après les Tableaux Célèbres." By H. M. M. Lawrance. 127 pp. (Edward Arnold.) 2s.

"The Best French Poetry." Six volumes. Plain texts. Alfred de Musset, "Poésies." Jean de la Fontaine, "Fables." Alphonse de Lamartine, "Poésies." Théophile Gautier, "Poésies." Victor Hugo, "Poésies." "Petite Anthologie du Seizième Siècle." Edited by Prof. Walter Rippmann. (Dent.) 3d. each net.

"The Senate Edition 'La Guerre.'" By Taylor-Dyson. (A French Reader for Schools.) 124 pp. (Gill.) 10d.

Eckmann-Chatrian: "Waterloo." Adapted and edited by E. Pellissier. 194 pp. 2s. 6d. Key, 44 pp. 2s. 6d. net. Word and Phrasebook, 24 pp. 6d. (Siepmann's Advanced French Series.) (Macmillan.)

"Deux Nouvelles (Pierre et Camille, et Croiselles)." Par Alfred de Musset. Edited by F. Victor Massard. 188 pp. (Rivington.) 1s. 6d.

"Single Lesson French Readers." Term VI. By B. Minssen. 116 pp. (Rivington.) 1s.

Classics.

"The Alcestes of Euripides." Translated into English rhyming verse by Prof. Gilbert Murray. 98 pp. (Allen and Unwin.) Cloth, 2s. net; paper, 1s. net.

"Key to the Elements of New Testament Greek." By the Rev. H. P. V. Nunn. iv+28 pp. (Cambridge University Press.) 2s. net.

"An English Greek Lexicon." Second edition. By G. M. Edwards. xxxii+338 pp. (Cambridge University Press.) 9s. net.

"The Annals of Tacitus." Book IV. Edited, with Introduction and Notes, by G. M. Edwards. xxviii+152 pp. (Cambridge University Press.) 3s. net.

"Matriculation Latin Papers: Papers in Latin Grammar, Composition, and Unseen Translation, set at the Matriculation Examination of the University of London from September, 1903-January, 1915, with Full Solutions to the Last Paper, Notabilia, and Illustrative Sentences for Latin Prose." 134 pp. (Clive.) 1s. 6d.

English: Grammar, Composition, Literature.

"Composition for Junior Forms." By George H. Green. With fifteen full-page illustrations, eight of them being in colour. (Black.) 1s. 4d.

"The Story of the Golden Fleece with Theseus and Perseus." Adapted from "The Heroes" of Charles Kingsley by M. W. Jennings. (Stories Old and New.) 126 pp. (Blackie.) 9d.

"Modern Language Review." Vol. x., April, 1915, No. 2. 138 pp. (Cambridge University Press.) 4s. net.

Dryden: "Annus Mirabilis." Edited by W. D. Christie. With an Introduction by F. Page. 80 pp. (Clarendon Press.) 1s.

"Matriculation English Papers: Papers in English set at the Matriculation Examination of the University of London from January, 1907-January, 1915, with Model Answers to the Last." 130 pp. (Clive.) 1s. 6d.

Bacon: "Essays." By A. F. Watt and A. J. F. Collins. vi+252 pp. (Clive.) 2s.

The "Senate" Edition:—Shakespeare: "Coriolanus," "Merchant of Venice," "Julius Caesar." Edited by Canon Augustus Jessopp. Questions, Answers, and Introduction by Dr. Jessopp. 96 pp. (Gill.) 1s.

History.

"German Culture Past and Present." By E. Belfort Bax. 280 pp. (Allen and Unwin.) 4s. 6d. net.

"Visual History." By Agnes Nightingale. Containing 23 page outline pictures and a map for colouring; also 115 small marginal illustrations and 21 maps. 48 pp. (Black.) 8d.

"The Main Stream of European History." By the Rev. Frederick Harrison. 184 pp. (Blackie.) 1s. 6d.

"Wales and the Wars of the Roses." By Howell T. Evans. vi+244 pp. (Cambridge University Press.) 10s. net.

"Key to Exercises and Problems in English History, 1485-1820." By W. J. R. Gibbs. 20 pp. (Cambridge University Press.) 1s. net.

"Cambridge Historical Readers: Primary." Specially adapted for Welsh schools. viii+242 pp. (Cambridge University Press.) 1s.

"Historical Section Modern School Series." Book V., "The Tale of Progress." 256 pp. (Cassell.) 1s. 6d.

"A History of England and the British Empire." Vol. iv., 1802-1914." By A. D. Innes. 640 pp. (Rivington.) 6s. net.

Geography.

"The Surface of the Earth: Elementary, Physical and Economic Geography." By Herbert Pickles. xii+170 pp. (Cambridge University Press.) 2s.

Cambridge Geographical Readers. Edited by G. F. Bosworth. I., "The World and its Wonders." viii+154 pp. 1s. 3d. II., "England and Wales." x+180 pp. 1s. 4d. III., "The British Isles." viii+210 pp. 1s. 8d. (Cambridge University Press.)

Here and There Stories. Illustrated Readers in Geography. Intermediate, No. 10, "Here and There in Scotland and Ireland." 80 pp. Sewed, 4d.; cloth, 5d. Senior, No. 15, "Here and There in Australasia." 96 pp. Sewed, 5d.; cloth, 6d. (Macmillan.)

Mathematics.

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CORRESPONDENCE.

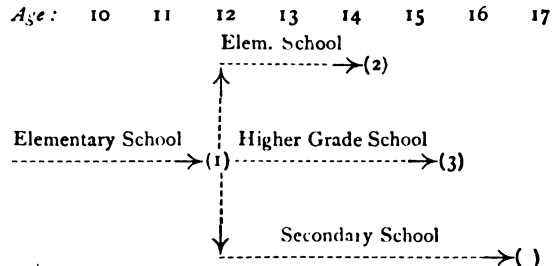
The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising any article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.

Circular 849.

It has occurred to me that the facts mentioned below may be of interest in connection with the subject of the above Circular, more particularly with reference to Section 9, and the proposal to utilise the services of teachers.

In 1904 it fell to my lot, as organising superintendent, to the non-county borough of Carlisle, to frame a scheme of organisation so far as our powers under the Act would allow. Following the Scottish system, I instituted a series of examinations corre-

sponding to the qualifying, the merit, and the intermediate certificate examinations of Scotland. These, however, we called by the name of merit, leaving, and council certificate examinations respectively. They have been used for the same purpose as the Scottish examinations, viz., to give the various stages of education an object, so far as they go, and to pass pupils forward to institutions for further education. Our scheme may be represented graphically thus:—



(1) Merit examination; (2) leaving examination; (3) council examination.

The part of the scheme relating to the secondary schools has not yet been brought into operation, but if this should be done, our local system will correspond exactly to the Scottish system.

My immediate purpose is to explain how we have found it possible to utilise the services of the teachers in conducting the examinations. Each year I nominate six or seven head-teachers, who, with myself, form the examining body, and thus in the course of three or four years, each head-teacher takes a share in the work. We then discuss the arrangements of the previous year, making alterations where thought desirable. We also discuss the questions of the previous year, both in respect of number and character, but the actual framing of the questions is left to me.

The arrangements are then embodied in a circular which is issued to the head-teachers, together with a schedule, in which is entered the name and age of each candidate and an estimate of his ability and knowledge in each of the subjects of examination, twenty marks being taken as a maximum in each case. The schedule also contains columns for the marks actually obtained in the various subjects at the written examination. By this means the relative position of the pupils can be compared at a glance both upon the teacher's estimate and upon the result of the examination. If any discrepancy is discovered the papers undergo a further scrutiny.

The examinations are held at a centre where about 200 candidates can be accommodated and the members of the examining body act as invigilators. The worked papers are forwarded to the central office, where the examiners attend as convenient during the next week or so and mark the papers, each examiner taking a subject or part of a subject throughout. The candidates place their name and school on each paper; numbers are merely used to show where the candidate sits. There can be little advantage in withholding the name of the candidate, and identifying him merely by a number. The risk of his making a mistake with regard to his number is far greater than the likelihood of the examiner being biased in favour of pupils from his own school. The tabulation of the marks is done by the office staff. The marks obtained are entered upon the schedule, a list of successful candidates is prepared and sent to each school, and a copy of the schedule of marks, and the marked papers, are returned to

the school concerned. There is no secrecy about these proceedings, and the teachers, I think, regard the examinations with the confidence which is produced by intimate knowledge of the mode of procedure.

For the most part, only the marks obtained at the written examination are counted towards the certificate; an exception is made, however, in the case of the teacher's marks in history, geography, and drawing, which, after being standardised, are added to those obtained at the written examination. As a good deal of discussion has taken place upon the subject of standardising the marks given by different teachers, a statement of our experiment may be of interest as showing the line along which we have sought a solution.

It is assumed that the *relative* mark awarded by the teacher is entirely trustworthy, and in this connection I may quote Scottish experience. Speaking of the leaving certificate examination, in his report on secondary-school education in Scotland for 1913, Sir John Struthers says: "In most schools, the teacher's estimate was thoroughly reliable. When the result of the written examination did not agree with the teacher's estimate, inquiry generally showed that the teacher's mark more fairly represented the value of the pupil's work. When the teacher's standard was not the same as the Department's, the *relative* position of the candidates, at all events, was correctly given" (p. 9).

The absolute standard, however, varies with different teachers. To take three schools, for example, which send, say, fifteen pupils each: out of a total of twenty marks, one teacher will award his best pupil sixteen marks, another fourteen, and a third nineteen, the remaining pupils being placed in correct relative order. From my knowledge of the character of the work of these three schools, I consider that the top pupils are probably equal in ability and attainments. As an attempt at standardisation, we therefore allot, say, seventeen marks to the top pupil in each case, and increase or reduce the marks of the other pupils in proportion; in practice, we should add one and three respectively to each candidate in the first and second schools mentioned above, and deduct two from each candidate in the third school. I must admit, however, that a real difficulty exists where only one or two candidates come from a particular school.

We have no regulation as to the proportion of candidates to be presented from any school, but several head-teachers make the examination a form examination. They find it useful as offering a standard of attainment to both teacher and pupil in the subjects taken.

A suggestion arises here: Would it not be possible for a number of school districts to be formed, each containing twenty-five to thirty secondary schools in receipt of Government aid? A local examining body might be formed for each district, consisting of, say, H.M. inspectors for the district, a number of head- and assistant-teachers chosen by rota, and one or more officials of local (part ii.) authorities. The papers of the pupils who reached a certain standard of proficiency might be submitted to a central examining body of the Board of Education, who should revise and standardise the papers where necessary and issue the certificate. The central body might also frame the questions, submitting them first to the local inspectors of secondary schools, who would see that they fairly conformed to the syllabuses of work in use in the district. Other details would settle themselves *ambulando*.

J. DUCKWORTH.

Carlisle.

The Promotion of Appreciation of Music.

I SHOULD be very grateful if any of your readers could kindly give me any information (a postcard would do) on these points:—

(1) If they have tried a piano-player or gramophone for promoting the love and appreciation of music, What is their experience of these?

(2) What books, periodicals, or other helps towards promoting musical appreciation have they used?

(3) Have they given any "talks" on great composers, national songs, masterpieces, etc.? If so, what? And from what sources?

(4) Do they know of an instance in which music is applied to Swedish gymnastics? Or can they name any good system of musical drill?

(5) Any books containing favourite songs sung by their pupils?

I am trying to gather useful information for the benefit of teachers and children on these points.

ERNEST A. CAVE.

St. Andrew's, Uxbridge.

University College, London, "Pro Patria."

MAY I ask the hospitality of your columns to bring before the past and present students of University College, London, the following matter? :—

A new edition of the University College, London, "Pro Patria," is in course of preparation, and will be issued shortly. Past and present students, or their relatives and friends on their behalf, are invited to send full particulars of the capacity in which they are serving the country at the present time. In the case of the Army, rank and regiment should be given; in the case of the Navy, rank and ship. It will be a convenience if the Faculty to which the student belonged, and the date of his entry to the College, can also be given.

These particulars should be addressed to the Publications Secretary, University College, London (Gower Street, W.C.).

T. GREGORY FOSTER.
(Provost.)

Marks for Discipline.

MAY I ask if you will assist a regular reader of THE SCHOOL WORLD to find the printers of the books used in the "Stars and Stripes" system of awarding good and bad marks for discipline in schools. So far as I can remember little blue and red books were used.

F. BURKITT.

Bristol Grammar School.

The School World.

A Monthly Magazine of Educational Work and Progress.

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All contributions must be accompanied by the name and address of the author, though not necessarily for publication.

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SIXPENCE.

SALARIES AND CONDITIONS OF SERVICE IN SECONDARY SCHOOLS.

By ALEX. BLADES, B.A., and G. D. DUNKERLEY, B.Sc.

THE question of the conditions of service in secondary schools is of such vital importance to education that no apology is needed for discussing it at the present time. Apart from the fact that immediately before the outbreak of the war there were unmistakable signs that all sections of the nation were at last realising the duty of the community towards this important branch of national organisation, recent events have demonstrated how great an influence the universities and secondary schools of continental countries have exercised in formulating and moulding national policy. That this national policy in itself may be unsound does not in any way detract from the efficiency of the system, and it is safe to prophesy that at the end of the present European crisis the educational programme in England will have to be severely overhauled and modified in many ways. It therefore behoves the teacher, who, in spite of his having received scant consideration in the past, is, after all, the true expert in education, to be prepared with his views and to ensure that they are taken into account.

The standard of education rises or falls with the teacher, and the present conditions do not afford anything like compensation for the outlay of time, money, ability, and energy essential to the proper equipment of a secondary-school master. The prospects offered to an aspirant to the profession are by no means alluring. He leaves the university at an average age of twenty-two years—or if the year so advisable at a training college is included—at twenty-three. He finds that he can command a salary of from £120 to £150 per annum—rarely more—according to his qualifications; that tenure is even now not secure; that superannuation is still “under consideration”; and that he may, in the course of twenty

years, secure an average competence of £190 per annum. Small wonder that many change their minds and merely use the profession as a stop-gap until opportunity arises of entering a more lucrative sphere of life. Further, the degree of inspection to which a teacher is subjected from inspectors of the Board of Education, local authorities, governors, headmasters, and parents, renders the tenure of any but the most successful precarious. It is becoming more and more difficult to meet the demand for efficient teachers, and unless salaries are considerably improved in the near future, the difficulty will increase. The supply of teachers is being maintained at its present level only by the large influx of clever pupils who pass from the elementary schools to the secondary, and who are maintained out of public funds almost entirely throughout their scholastic career. The time seems fast approaching when the scholarship will be recognised as the only avenue to the profession. This state of affairs does not compare favourably with that in the medical, legal, and other professions, into which the maintained scholars enter only in a fair proportion compared with the whole.

As an outcome of the growing unrest, and in an endeavour to secure the adequate remuneration which is essential if the high ideals of the new Registration Council are to be effective, the Incorporated Association of Assistant-masters in Secondary Schools has recently issued a statistical report of the salaries of assistant-masters in the aided and maintained schools of England and Wales. The compilation has been based on the actual figures supplied individually by the assistant-masters themselves, and it is significant of the awakened interest within the profession that 4086 full-time assistant-masters have responded to the invitation to give details of their salaries. In addition, the local authorities have adopted a very sympathetic attitude and have furnished ready assistance in supplying par-

ticulars of official scales. Any compilation dependent on voluntary returns must have some omissions, but the proportion in this report is very small, and there is abundant material for forming a true conception of the conditions in the various localities.

The report shows the following averages :—

	Average salary £	Average number of years of service
England and Wales	175.52	12
England alone	177.27	12.34
Wales alone	158.42	11

If we compare this £175.52, reached after twelve years' service, with the figures for German schools, we get a striking contrast. It is perhaps fairer to take the German figures for ten years, as the German teacher starts later :—

	£
Prussia, after 10 years' service	240
Bavaria	315
Saxony	270
Hesse	210
Bremen	300
Hamburg	290

It must be repeated that these are merely the salaries after ten years' service. The German teacher goes on regularly and systematically to his maximum. The maxima attainable vary slightly with the localities and range up to £450. In most cases (including Prussia £360, Bavaria and Saxony £360) the maximum is £300 or more. In addition to the above salaries, there is nearly always an extra allowance (varying according to the locality, up to £65) for house-rent. Finally, there is a liberal pension, either for the teacher at the end of his work, or for his widow and children when he dies.

Among the local education authorities of England and Wales there is *only one* scale of salaries (London) in which the ordinary maximum attainable is £300 (after fifteen years' service). The following tables give some idea of the inadequacy and want of uniformity existing in our aided and maintained schools. The usual maxima for qualified men, graduates where specified, are given. There are usually lower grades in each instance, but cases such as "by special vote," "extra for special cases," or "for senior assistant only," are omitted as not being within the range of the ordinary qualified assistant.

Number of scales reaching a maximum of :—

	County Councils	England County Boroughs	Unofficial "published"	Wales
Over £250	1	1	2	—
£250	4	4	3	1
£211-£250	2	4	1	3
£210	—	4	1	1
£200	7	12	11	2
£181-£199	3	6	2	1
£180	—	11	7	3
Under £180	—	3	19	7

It will be seen that in county and county borough areas £200 is, as a rule, regarded as a fitting reward for a successful life's work. In one case *honours* graduates find that they can look forward to £190 after sixteen years' service. In another the maximum is £160 after ten years. Some of the "unofficial" scales border on the burlesque. For instance : initial, £110; annual increment, £10; maximum, £130 (in two places). There are ten schools with a maximum of £150 (one of which gravely announces "an initial salary of £140, rising by annual increments of £5 to a maximum of £150"), while five go below even that figure. In fairness to some of the larger aided, but not maintained, schools, it should be mentioned that they pay good salaries, but do not "publish" scales.

With regard to the salaries actually received, the report shows the same diversity of figures. The smallest is £30 and the largest is £500, while the number of "glaring cases" is so large that it is impossible to show them all. Instances such as the following abound :—

Graduate, £90, eight years' service.

M.A. (Oxford), £120, fifteen years' service.

One could quote numbers of graduates, and even honours graduates, with long service round the £100 mark, but perhaps the following tables showing the higher salaries will best demonstrate the deplorable state of things :—

Percentage of Masters Receiving

	Over £350	£350 and over	Over £300	£300 and over	Over £250
England	0.2	0.4	1	1.7	4.6
Wales	—	—	—	—	—
England and Wales	0.18	0.39	0.91	1.58	4.21
	£250 and over	Over £220	£220 and over	Over £200	Less than £200
England	7.3	12.2	14.6	19	71.2
Wales	0.84	2.8	3.35	4.5	88
England and Wales	6.68	11.32	13.53	17.7	72.8

Percentage of Schools in which the Highest Salary is

	Over £350	£350 and over	Over £300	£300 and over	Over £250
England	0.7	1.3	3.6	5.6	11.4
Wales	—	—	—	—	—
England and Wales	0.63	1.1	3.14	4.86	9.89
	£250 and over	Over £220	£220 and over	Over £200	Less than £200
England	19.1	25.6	30.1	35.6	51.8
Wales	2.4	9.6	12	14.5	68.7
England and Wales	16.95	23.55	27.79	32.81	54

Two points stand out clearly in the report, and they are indicative of the lamentable want of organisation and system in this matter of salaries :—(1) The enormous disparity in the salaries of different men with the same qualifications, engaged in precisely the same work and in similar areas, and (2) the parochial principle of disregarding, wholly or in part, service in other areas, so that a man cannot

move to another district without throwing away the value of the whole or of part of his previous service. Surely the work is the same, whether it be carried out on the left or on the right side of the parish pump.

The present conditions have arisen from a variety of causes. In the first place there has been a total lack of organisation in the development of our secondary educational system. Endowments, a tower of strength and pride in more primitive days, and even now, where sufficient, the source of our highest salaries, have undermined the position of education as a national work and are unsuitable for modern requirements. The inequalities between the endowments of different schools, the caprice upon which their establishment has depended and still depends, the continual fluctuations in their value, these are to some extent responsible for the anomalies revealed by the Association's publication.

Secondly, educational control has not been sufficiently centralised. National education is not a collection of isolated and independent units, and an enormous diffusion of energy has resulted from the relegation of the administration to the local authorities, with whom more pressing local needs must necessarily often eclipse any attempts at reform. Especially is this true of the agricultural districts, where, squeezed between the pressure of roads and ratepayers, the teacher and his work have had a particularly bad time. There is no desire here to carp at the energies of the local authorities as such. They are mostly very zealous and really sympathetic. It is the system that is at fault, with its want of co-ordination and centralisation. In many cases the glaring inadequacy of salaries is due not so much to the unwillingness of the local authority as to actual inability. The chaos largely results from the incessant struggle between the local and the central authorities, each endeavouring to put the responsibility (especially in matters of payment) upon the other.

Again, it is a regrettable fact that the majority of individual members of governing bodies are not really conversant with the organisation of secondary schools. To counteract this deficiency, teachers (and by this is meant the actual teachers, or, as they are misnamed in England, "assistant" teachers) should be directly represented on the Boards of Governors. It is only by such representation that the closer touch which is so necessary between the governors and the assistant staffs can be obtained. This representation would also greatly benefit education in general by ensuring a closer insight on the part of all concerned into many questions, and a quicker

solution of problems which at present drag over considerable periods.

Probably the secondary-school teachers themselves are somewhat to blame. As a rule, they are disinclined to seek the lime-light of publicity. In many cases they are directly discouraged, to say the least, and it is only in rare instances that we find them on public bodies. Yet secondary-school teaching postulates at least average ability and a comparatively large amount of education and culture. The reason for this attitude seems to be that until recently there was no such profession as that of the secondary-school assistant-master. There were many who used teaching as a stepping-stone to some other calling, and who in consequence did not enter into the spirit of teaching. For those remaining in the profession there was always a very fair chance of securing a headmastership, and there were few or none who had any real interest in the maintenance of the dignity and rights of teachers.

At the present day two factors have brought about a radical change. First, modern requirements demand that a man be properly qualified for the class-room before he enters it; he must be an expert in his own particular subject or subjects. Secondly, owing to the fact that the number of headships is nothing like sufficient to translate all the good teachers, not one assistant in ten can hope for such preferment. The specialist system has proved its value, and in many cases it would be a distinct loss to education to transform a well-equipped specialist into a general organiser. Hence the career of an assistant must be rendered self-contained. It must be a profession actually as well as theoretically, and salaries will have to conform to the standards in vogue in the other professions.

One fact seems clear. Teachers are awakening from their long apathy. They are understanding the value of cohesion. They are discovering that a more active participation in, and a closer contact with, public life will be advantageous both to themselves and to their country. They are realising that the public must no longer harbour the erroneous idea that a secondary-school teacher is either the meek and mild usher of Dickensian type or a philosophical recluse who has not the faintest notion of "business," and who requires the local business man or lawyer to stage-manage his life-work.

Several suggestions for improvement may not be out of place. The most obvious is the merging of the secondary-school teaching profession into the Civil Service with its automatic scale, its security of tenure, and its superannua-

tion. This, however, by its very magnitude, seems at present too much to hope for. In the meantime there should be :—

(1) Provision for increased grants from the National Exchequer. It is a striking fact that the Board of Education has provided only 25 per cent. of the cost of secondary education; of the remainder, 22 per cent. has been borne by the local authorities. Of late years the latter proportion has been expected to increase and thus alleviate the conditions. Expenditure has, however, risen to such a figure that local authorities all round are refusing further increments out of the rates. The total grant given by the Board of Education to secondary schools during the year ending July, 1913, was £605,198, whereas the total expenditure by the school authorities was £2,415,792. It is common knowledge that arrangements had been concluded to make extra grants for the present year, but unfortunately the national crisis necessitated a postponement. It is, however, very doubtful if the proposed grants would have led to the desired end if any further requirements had been made from the local authorities at the same time. The present system of grants is imperfect, in that it does not allow of variation according to the particular needs of the different schools and according to the disparity in the cost of administration. Further, the pupils in the lower forms of the existing schools—under 12 years of age—with the exception of ex-public elementary scholars between the ages of 10 and 12, do not earn any grant unless they are from the public elementary schools. Such forms constitute an integral part of a secondary school, and a due proportion of their maintenance should be covered by grant.

(2) A curtailment of additional outlay in administration and buildings, until the teachers have been considered and their demands reasonably satisfied.

(3) A public guarantee for the teacher's remuneration. The national nature of his work demands it. In connection with this point, there is a growing disinclination on the part of many local authorities to provide an adequate grant to the "aided" schools, *i.e.*, those that are not the direct property of the authority. This again is a question of rates, and it is argued that the onus of maintaining their efficiency does not fall upon the local authority. However, secondary education has been entrusted to the local authorities, and for good or ill they have accepted the responsibility. Collectively and individually, they are answerable to the nation for the well-being of our secondary schools. They levy rates for the administration of secondary education and

they are morally and actually bound to see the matter carried through.

(4) A reasonable guarantee of tenure. There have been of late too many cases of retrenchment on scholastic expenditure by the replacement of old and tried servants, who have reached a moderate competence, by younger teachers of little or no experience, on whose small salaries a considerable saving is effected. The system of gradation of remuneration, with its payment of smaller initial salaries, includes a moral obligation to guarantee the continuance of the payments through the higher stages. Let it be at once explained that there is no desire to bolster up incompetence, but a man who has spent many years in teaching should not be liable to be cast suddenly into the street. If he is really incompetent, the fact should be discovered before the consequences to himself are so serious and before the nation has incurred a financial indebtedness towards him.

(5) A minimum scale for teachers of sufficient qualifications. This should be rigidly enforced as a condition of grant. The terms of such a scale would naturally be increased in the larger towns and in the more important schools.

(6) More uniformity with regard to fees. The fees in some of the municipal schools are much too low, while many of the other schools are driven to an increase of fees as the only means of meeting expenditure. Free places are now open to all capable and deserving children, so that a system of standardised fees would not entail any injustice or hardship.

Many other aspects might be considered, but the article is already longer than was anticipated. May these expressions give educationists material for reflection, and so help towards that amelioration of which secondary education in England stands in such urgent need.

ENGLISH LITERATURE TEACHING: THE METHOD OF LITERARY UNITS.

By NORMAN HEPPLE, M.A., M.Litt.

English Master at Gateshead Secondary School.

DURING the last half-dozen years, and more especially recently, signs have not been wanting of a new impulse in literary criticism and research. This sudden access of vitality has been marked less by an increase of vigour in the application of critical principles to literature in the time-honoured paths of literary biography and chronology than by a striking change in the *direction* of inquiry.

Hitherto the historian of literature has made it his business to investigate the whole of a given author's works, not so much, if indeed

at all, with the view of classifying them as examples of any specific literary forms, as with the intention of estimating, after an examination of their subject-matter and characteristic style, the author's importance and position in the history of general literary development.

Large and fruitful as such a field of investigation has been, it is not inexhaustible, and we now seem to have reached a stage when little remains to be done in this direction beyond keeping the history up to date by recording the works of new writers of distinction as they appear. General histories of literature, varying considerably in merit, continue to be written, but, so far as their subject-matter is concerned, they are largely futile duplicates of one another, the discovery of fresh material being necessarily a somewhat rare occurrence. It is not surprising, therefore, that critical enterprise should have found for itself a new channel into which it might direct its energies, with the result that single literary forms are now being disengaged, so far as may be, from the complex mass of literature in which they lie embedded, are having their respective characteristics carefully defined, and their fortunes traced along their individual lines of development. Thus we are at present having series of books devoted entirely to the study of such themes as the ode, or the sonnet, or the essay, works of which the more notable and recent examples are Messrs. Blackies' "Warwick Library" dealing in separate volumes with the essay, pastoral, lyric, masque, etc.; Messrs. Dents' "Channels of Literature" treating of the epic, the elegy, the drama, the novel, etc.; and Mr. Martin Secker's "Art and Craft of Letters" concerned with the ballad, parody, satire, comedy, and similar subjects. The publication of such series is significant of the importance which our more responsible men of letters are beginning to attach to the new movement.

Such a change in critical method has not passed unnoticed by teachers of literature in our secondary schools, many of whom are turning it to advantage in the form of a new pedagogical method, and that the latter commends itself to other presumably competent educational authorities is evident from an inspection of recent examination papers in English, from which the following typical questions have been selected:—

Explain ballad, elegy, lyric, sonnet. Illustrate your answer by quotations.—*Oxford Senior Local Examination*, 1913.

Write out a sonnet and describe its metrical construction, explaining any technical terms you find it necessary to use.—*Preliminary Certificate Examination*, 1914.

A sonnet, an elegy, an ode, an epic poem, a parody, a ballad. Give an instance of any three of these. . . . Show that you are acquainted with the special characteristics of each of the three, etc.—*Preliminary Certificate Examination*, 1907.

What are the chief characteristics of a ballad? Illustrate your answer by reference to any ballads ancient or modern.—*Durham University Matriculation Examination*, 1914.

(a) State the characteristics of any three of the following literary forms: Elegy, epic, epigram, pastoral, satire. (b) Illustrate your answer by describing one example from English literature of each of the forms you have selected.—*London University Matriculation Examination*, 1910.

Explain the construction of the sonnet. What are its chief varieties in our literature? Connect with the history of the sonnet in England the names of Surrey, Sidney, Spenser, Milton, Warton, and Bowles.—*Inter-B.A. Examination*.

It is generally conceded that the function of an examining body is to guide studies as well as to test them; but, unfortunately, it is not an entirely unfamiliar experience to find that such bodies sometimes over-estimate the capacities and utterly misjudge the tastes of pupils of school age. Still, if we can rely on their guidance at all, we should be prepared to give the new method our careful consideration and a fair trial, for it undoubtedly has much to recommend it.

The days are happily long since past when the study of literature in our schools so often meant that pupils were required to engage in the unprofitable task of learning the titles of hundreds of books in association with the names of their authors and the dates of their publication; when it was of more importance to know who wrote "The Merry Beggars" than to have felt the inspiration in a song by Shelley, or the poetic richness of a line by Keats. Not that chronology has not its legitimate uses, but that, practised in such a way, it became utterly barren and unproductive as an educational method.

Since then, we have more wisely been content to place in the hands of our pupils more or less substantial portions of our literature itself, in the form of complete texts; essays, tales, plays, volumes of verse, and the like. When such books have been carefully chosen and wisely used, much very good work has been done by our pupils in finding out, at first hand, the intrinsic merits of the works studied, and in comparing the thoughts and styles of different periods and schools. But in prescribing such texts for study, have we always known exactly where we were going? Is it not to be feared that we have too often wandered aimlessly, browsing from one rich portion of the pasture to another—an essay here, another there, an ode from this poet, a sonnet from

that? We have taken care that the works chosen for study have been of the best, and that they have been suited to the ages and capacities of our pupils; but within these limits our choice has been, we fear, too often quite promiscuous; and, lacking a definite aim for our course as a whole, we have not, perhaps, reaped all the advantages we might otherwise have done.

Now it is precisely this deficiency that the new method supplies; in using it we set out to achieve something definite, and every piece of work done brings us a step nearer the end we have in view. The concentration of attention on a series of specimens of a single literary form, and the extraction inductively of their common qualities, give to our work a degree of coherence which it did not before possess, while the sense of unity and totality is emphasised, if the specimens be arranged chronologically, and the history of the form be traced in the examples studied. This is the chief positive advantage of the new method.

But before a method can meet with any general acceptance it must not only remedy the defects of its predecessors but preserve in itself all the merits that they possessed; and it is to the credit of the method at present under consideration that it can pass unscathed so severe a test. Let us for the sake of illustration take the case of lyrical poetry, the study of which has, at one point or another, a place in the curricula of most of our schools. Hitherto anthologies intended for use in school, if they have followed any ordered plan whatever, have been arranged either (1) chronologically, or (2) for use with the "Comparative Method." The condition in the last sentence implies an alternative which may at once be discarded, for whatever attractions such an anthology may have for the dilettante, it can hardly be regarded as serviceable in school, coming, as it does, under the same category as the method which we have already described as "browsing."

The chronological arrangement can undoubtedly be justified and has its legitimate uses, though its employment is beset with dangers. If all the lyrical poems in an anthology so arranged are studied consecutively and for their own sake, the chronological method borders closely on the method we are describing, the unit singled out for special treatment being the lyric, though the latter is undivided into its separate varieties. If, on the other hand, the attempt be made to use such a book as a basis for the teaching of general literary history, unless the period under survey be strictly limited—when three parts of the book may be wasted—the tendency will be to depend for a first-hand knowledge of

actual texts too much on one literary form to the exclusion of the others. We should find ourselves *telling* our pupils about the other branches of literature in the period, and reverting to the old-fashioned method which we have already stigmatised as barren and uneducational.

If the same material were designed for treatment under the new method, it would have to be entirely re-arranged. The poems would then be classed severally as units of lyrical poetry, and would appear in separate groups under the headings of song-lyrics, odes, elegies, sonnets, lyric-idylls, etc. The specimens in each group having been studied, conclusions could then be arrived at as regards the features common to the form, the causes of variation from the normal, the fitness of the form for its functions, and other considerations of a like nature. If, in addition, the poems in each section were arranged in order of date, the advantage of the chronological method, the assignment and relation of the poems to the periods to which they belong, would be retained, and the method itself used in a subsidiary, though legitimate and reasonable manner. A collection of lyrical verse¹ following such a plan, and containing the necessary critical apparatus, has been published by the Cambridge University Press, but as the present writer was responsible for its appearance he must refrain from any comments on its usefulness. He is induced to mention it only because he is still unacquainted with any other anthology constructed on similar lines.

In the same way it may be claimed for the method under discussion that it preserves and includes the principles of the so-called "Comparative Method." The value of the latter lies in the exercise it provides in perceiving resemblances and discriminating differences between literary works comparable as to subject-matter, and it seems obvious that a precisely similar discipline is afforded by the Method of Literary Units, comparison of the closest kind being involved at every stage. The fact that such comparison is instituted primarily between varieties of form and treatment rather than of theme makes the exercise even more thorough and exacting than its counterpart in the normal comparative method, for, in comparing any one specimen of a form with its fellows, scrupulous regard must be paid to details. Moreover, the use of this method does not, of course, prohibit the comparison of works similar in theme: the three odes to the skylark, for example, by Shelley, Wordsworth, and Hogg respectively.

¹ "Lyrical Forms in English. Cambridge University Press, 1911.

may still be compared with one another, or, if the Essay happen to be the unit prescribed for study, such examples as Addison's "Sir Roger at Church" and Cowper's "Country Congregations" may still be examined side by side. Further, we venture to think that the complete comparison of such works, involving examination of their subject-matter, form, tone, and treatment, will afford most benefit to the pupil equipped with just that independent understanding of the relation of form to matter that would be acquired by following a course such as we have described: he would know what to look for, and the work would be more genuinely his own.

Similarly it will be found, if the method be examined in its application to the other literary units, that it is the lineal descendant of its predecessors inasmuch as it inherits all their advantages. At the same time its own peculiar characteristic and advantage must not be lost sight of: in the study of any single literary work two objects must be carefully kept in view; (1) it is to be appreciated for its own sake as a complete work of art, and (2) it is to serve as part of a plan designed to give greater coherency to our study of literature.

Finally, how much ground may we reasonably expect to cover, if we adopt this method? Having regard to the principles underlying the method, we should, of course, find it impossible to attempt to deal with certain forms, such as the epic; for obviously a sufficiently large number of examples on which to base conclusions could not be dealt with at first hand by the pupils; but, if we may count on a secondary school life of four or five years, and if the other units be judiciously distributed over the whole period, it will be found possible to cover a field of very considerable dimensions. The writer has found in practice that the work over a period of five years may be conveniently divided, so far as the special units are concerned, in the following manner:—

1st Year.—1. The Ballad. 2. The Short Tale.

2nd Year.—1. The Lyric (general form and qualities). 2. The Essay (narrative and descriptive).

3rd Year.—1. Special Forms of the Lyric:—(a) The Song. (b) The Idyll. (c) The Sonnet. 2. Extension of the Essay.

4th Year.—1. Special Forms of the Lyric:—(a) The Ode. (b) The Elegy. 2. The Play (history and comedy).

5th Year.—1. The Play (tragedy). 2. The Novel (plot, character, setting, narrative-methods, etc.).

A scheme of systematic revision involving the application of the conclusions arrived at to a few further examples of each form, may be kept running side by side with the introduction of new units, and this will at once extend the

pupil's acquaintance with the forms, and keep fresh in his memory their characteristics and other information he has acquired about them during the course. It will be noticed in the above curriculum that the consideration of the play and the novel has been deferred to the fourth and fifth years of the course; and indeed their presence even there may at first sight be called in question, in view of the specific purposes and requirements of our method. A little reflection, however, will show that their inclusion at such a point is quite reasonable and practicable. Examination papers like those of the Preliminary Certificate Examination, for example, presuppose a general acquaintance, on the part of the candidate, with some half-dozen of Shakespeare's plays, and with the chief examples of standard English fiction; and those of us who have prepared pupils for such examinations know that reading of this kind is done sufficiently well to admit of its serving as a basis for the elementary study of the play and the novel respectively, as literary forms. It is a good plan to set one standard novel, and occasionally a play, for independent reading during each term. Neither master nor pupil will deal with the book during school hours, so that none of the time devoted to teaching need be absorbed, while the pupil can hardly complain of any serious encroachment on his leisure. A short examination paper on the book set near the end of the term will ensure that the reading has been done. In this way, by the time a pupil reaches the highest form, he will have read, with considerable care, some twelve or fifteen of our best novels—no mean foundation, it will be agreed, on which to build his ideas of the materials and methods of fiction. It is, of course, of vital importance that the teacher who draws up such a course of reading should choose with extreme care such novels as are representative of the form and illustrative of the points which are to be "discovered" when the novel is ultimately examined as a literary form—an observation which leads us to conclude our survey with the reflection, so distinctive of the Method of Literary Units, that the joy of the journey is no whit impaired by the knowledge that there is an inn at the end of it.

Cambridge Greek Testament for Schools and Colleges. St. Mark. Edited by A. Plummer. lvi+302 pp. (Cambridge University Press.) 4s. 6d. net.—This edition of a gospel, the importance of which has been more and more realised during the last generation, will be welcomed by all students of divinity. The introduction deals with most interesting questions, and the fulness of the commentary may be gathered from the fact that the text occupies only 47 pages.

THE LOCUS AS AN INTRODUCTION TO GEOMETRY.

By A. T. WARREN, M.A.

Headmaster of Southgate County School.

THE importance attached to geometrical constructions at the time of the introduction of the "New Geometry" was responsible for a greater attention being paid to the idea of the locus. Hitherto it had been associated with theoretical solutions, to be avoided by all but the brightest pupils. It was now to be used to develop the boy's analytical faculties in the discovery by himself of geometrical constructions to satisfy stated conditions. The educational value of such analytical reasoning is very great. It has another virtue in that it can be grasped and applied by the dullest boy, who can test for himself the accuracy of the constructions to which his reasoning has led him.

Though all mathematical teachers may be agreed on most of the above points, there must be considerable variation in the stage at which such ideas are first introduced. A description of a method of introducing the idea at the earliest stage may be of interest.

The class, consisting of boys of eleven years of age, was asked to consider the surface of the blackboard as representing a plain on which a man, whose position was represented by a point A, was to find an object. What fact would he require to know about the object? The reply given by the class was "how far it was." The length of a ruler was given as representing the suggested distance, and a boy was called up and told to mark on the blackboard the position of the object to be found. Other pupils, however, marked other possible positions of the object. The class then discovered by themselves that the *distance* of the object did not give the position, but only a "path" on which the object was to be found. The use of a large pair of blackboard compasses to draw this path was then introduced. It was now suggested by the class that, in order to find the object, the man would require to know the direction. This gave another path, a straight line this time, on which the required object would be found. The point common to both paths was seen to give a position satisfying both conditions. The class thus discovered that:—

- (1) One condition about the required point gave a path on which it was to be found.
- (2) Two conditions gave two paths.
- (3) The point of intersection of these two paths gave a point satisfying both conditions.
- (4) Two conditions are necessary to fix the position of a point.

The use of a compass, the construction and use of a protractor were then studied. The parallel case in geography was next touched on. The longitude of a place gives a path on which the place is to be found; the latitude of a place gives a similar path; combined, the two give a position.

From the use of two reference lines in geography, namely the equator and the meridian through Greenwich, we tried the use of two reference points, A and B, for work in geometry.

A position had so far been fixed by a direction-factor and a distance-factor referred to *one* point. We now found that a direction-factor from A and another from B fixed a position C. The three points A, B and C were joined and the "triangle" was introduced.

A distance-factor from A and another from B were found to give us the choice of two positions, C and C', which both satisfied the given conditions. The points were then joined so as to form the two triangles ABC and ABC', and it was noticed that the two triangles were exact copies of one another.

Next we took a direction-factor from A and a distance-factor from B. This gave us, too, positions satisfying the two conditions, but the triangles formed as before were not, in this case, exact copies of one another.

The work done so far was then used to fix the sets of three conditions sufficient to determine the making of a copy of a given triangle.

A good exercise at this stage is for each boy to take a sheet of squared paper to represent a Mercator's chart, and on it to mark the place or places the latitude of which is equal to its longitude. A similar path can be drawn on the same paper for a place the latitude of which is a fixed number of degrees greater than its longitude; also for a place the latitude of which is double its longitude. From these experiments the class will learn that a path is also given when a *relation between two factors* is given. Similar exercises can then be done with the reference lines inclined at any angle.

Corresponding conclusions may next be drawn when the class is given corresponding relations between the distance-factors of a point referred to two given points. The two cases, in which a relation other than equality is given between the two factors, would not be taken at this early stage, but with judicious choice, by the master, of the various constants they form excellent exercises for "preparation" work by the pupil.

The stage has now been reached when the usefulness of the "locus" idea may be extended. The class can now make a list of the following paths which it will have discovered:—

(1) The path of a point which is at a stated distance from a given point *a*.

(2) The path of a point which is at a stated distance from a given straight line A.

(3) The path of a point which is at the same distance from a given point *a* as it is from a given point *b*.

(4) The path of a point which is at the same distance from a given straight line A as it is from another given straight line B.

(5) The path of a point which is twice as far from a given straight line A as it is from another given straight line B.

(6) The path of a point which is a stated distance further from a given straight line A than it is from a given straight line B.

With this collection the class will quite naturally proceed to determine the point or points common to two of these paths, and having the properties peculiar to points on each path.

The list will serve a double purpose. It will not merely provide a solution for certain problems, but also it will enable the class to set the problem. The latter is evolved from the union of two conditions. As in chemistry a molecule results from the union of two atoms of like, or unlike, kind, so the problem results from the union of two like, or two unlike, conditions. Thus the boy may select (1) and (4) on the above list, and ask the rest of the class to find a point that shall be at a stated distance from a given point *a* and shall also be at the same distance from a given straight line A as it is from another given straight line B. He may also base his problem on the union of two similar conditions and, by using (4) of the above list twice, may ask the class to find a point which shall be at the same distance from a given straight line A as it is from a given straight line B, and *also* shall be at the same distance from a given straight line C as it is from a given straight line D.

This synthetic formation of the question can be extended even at this early stage. In the following experiments the point is seen tracing out its path, as it fulfils the condition. A small hoop was taken and covered with paper so as to give a flattened form of a drum, and used to represent a circle of stated radius. As this moved so as to touch the rim of a larger hoop, either inside or outside, the path of its centre was noted. The smaller hoop was also made to roll along a straight ruler so as to show the centre of the circle, tracing out its path as the circle moved, so as to touch the given straight line represented by the edge of the ruler.

To illustrate the path of the vertex of a triangle on a fixed base as it moves so that

the area of the triangle remains constant, a pack of cards was used. A triangle was represented in colours on a face formed by the edges of the cards, the vertex being on the edge of the top card, and the base being formed by the edge of the lowest card. As the cards are made to slide over one another, the shape of the coloured triangle is seen to change, and the area remains the same while the vertex moves along a straight line, parallel to the edge of the lowest card.

Such was the beginning of the treatment. As the pupil advances in the theoretical work the locus will have a real interest to him, each new one encountered being added to his collection and used by him for the further propagation of the geometrical problem.

ELECTRICAL ENGINEERING AS A PROFESSION.¹

MANY hundreds of young men are leaving the universities and technical colleges every year as "electrical engineers," and in this country there are not sufficient places for them to fill; the supply is greater than the demand. You must forgive me if I tell you what in my belief are home truths, but I should be failing in my duty if I did not speak quite boldly upon this subject. Therefore we now find that very many are quite unable to get work in their profession, and others find that when vacancies occur there is a downward trend in the salaries attached to the posts. Except in the comparatively few big posts there is no doubt that generally the salaries of electrical engineers are now smaller than they were five years ago, at any rate in the public positions, though the actual cost of living has gone up in that interval, and will go up a great deal more in the future. What is the deduction to be drawn from these facts? It is surely this: that our young engineers must be prepared to go abroad. They have, it may be said, a national mission to perform.

The engineer is *prima facie* the pioneer of civilisation and is one of the principal agents in improving man's environment. British engineers by their influence abroad can improve and broaden the industrial output of this country, and can also act as missionaries of British influence. I am not speaking politically, though that may also be affected by the wise conduct of their own affairs. When asked by young men about their futures I have often regretted to find that they were not disposed to go abroad. I suppose in the course of a year I must see many scores of young men who want to improve their positions, or

¹ From an address to the students section of the Institution of Electrical Engineers on May 5th 1915, by Sir John Snell, president.

who are out of jobs and want me to help them. They come with letters of recommendation and many of them have an excellent training and are, so far as one can judge, in every way excellent men. It greatly surprises me to find what a large percentage of them, when I put the question to them which I almost invariably do first, "Are you prepared to go abroad?", reply that they do not want to go. They want to stay at home and seem to lack enterprise or courage or both, and to desire what they think is the softer job and easier way. That is not at all a good spirit to encourage.

The man who is going to succeed both as a man and as a professional man is he who will accept and follow up any proper course which opens to him, wherever it may lead, who is prepared to go abroad and to carry with him the best traditions of our country and heritage. There is no doubt about it that during the last generation or two it has been a "soft" age. There has been too much luxury and a desire to shirk responsibilities among many of us, which is characteristic of decadence. The war has happily changed that feeling, and will change it still more in the future. The training of engineers in particular ought to educate them to a strict sense of duty and a fidelity to their country's interests as well as to an *esprit de corps* in their profession.

Then again one finds that among many of those who have overcome this first obstacle and have gone abroad there is sometimes a tendency to grumble at their environment and not to make the best of things. That again does not lead to successful careers in our Colonial dependencies or in foreign countries. Mind you, I am speaking here of what I know. One often hears it said: "If I go abroad, I shall be lost sight of at home and be unable to get work at home again later on." I think that, as a general statement, this is a mistaken idea. Of course the experience gained abroad may not always be applicable at home, but I have generally found it is those who have not been conspicuously successful abroad who come home bringing this complaint. At home or abroad, I advise you to broaden your experience. Do not stay "on the switchboard" for several years if you can avoid it, and do not keep your eyes fixed only on the meters and the log books; get all the experience you can of stoking, engine-driving, repairs, and, if you possibly can, of distribution work. Join a field class in your spare time and do some practical surveying. So many electrical men get into a deep groove and narrow their experience so that they destroy their initiative and render themselves unfit for other classes of work.

Therefore I ask you, as a duty to your race and to yourselves, not to shrink when the time comes, as it will come to many whom I am addressing, to leave home and strike out in pastures new, carrying with you a full sense of the responsibility which will rest on you to do whatever work may be given with the very best ability and energy you can call up, and, if necessary, to put up for a time with certain inconveniences and trials. These every man has to meet, along whatever path his road may lie. If, then, any of you be asked to go abroad, consider the possibilities of the offer, of course like prudent persons, but let no weakening and undermining idea of little hardships or family severance, etc., distort your judgment. Our birthright consists in the advantages we possess as a race which have been derived from the labours of our forefathers, and we cannot make profitable use of these unless we ourselves in our generation do our share in the development of our knowledge of natural forces. As Smiles says: "There is a great deal of higher work, the work of action and endurance, of trial and patience, of enterprise and philanthropy, of spreading truth and civilisation, of diminishing suffering and relieving the poor, of keeping the weak, and enabling them to help themselves." The work of the man of science, and especially of applied science, or the engineer, does help in all of these. Röntgen rays enable much suffering to be relieved; wireless telegraphy saves many lives; and the skill of the engineer affords many blessings and many comforts to his fellows. In one or several of these you too can play your part. Young engineers are often too restless and impatient to get on. That is all very well within limits—"Ambition is a humour that maketh men active, earnest, full of alacrity and stirring, if it be not stopped." It is a spur to our energies and is certainly better than being slack. Lord Cromer once said that the best advice he could give to young men was: "Fear God, honour the King, and don't dawdle."

Engineers will agree that it is no good beginning to build the superstructure until the foundations are laid and have thoroughly set. There is a great deal of compensation in the world. Generally the man who rises quickly in youth gets up to a certain point and sticks there, because his past experience and his fundamental training have not fitted him for anything better. He is "spent." But the man who goes steadily and perseveringly along his course, doing the very best he can in each piece of work given to him to do, will, by sheer momentum, go a great deal further. I advise therefore that you do not strangle

your ambitions, but put a curb on them, and keep steadily turning out your work, knowing that infallibly the good worker always has his reward.

Kingsley makes Sir R. Grenville say to Amyas Leigh: "The best reward for having wrought well already is to have more to do; and he that has been faithful over a few things must find his account in being made ruler over many things." Speaking from experience, not only of my own life, but from my knowledge of many others, I say emphatically that there is no such thing as "luck," that there is much truth in the old adage that "genius is the art of taking pains," and that all good work honestly done meets with its own just reward. Be diligent in your work; be honest to yourself and to your employers; do whatever is given you with courage and with thoroughness, and you can safely leave the future to take care of itself. Thoroughness is vital; there is nothing I dislike so much as when I have asked an assistant to do something which I knew to be well within his capabilities, to be repeatedly appealed to by him on this detail or on that because he was afraid of the responsibility of framing his own decisions. Think for yourselves; if you do not know at the moment, lay yourselves out to learn, though on the other hand never be afraid to say you do not know. Do not shirk responsibility, and go at your work with zeal and with interest.

Some of you will remember Carlyle's words: "For there is a perennial nobleness and even sacredness in work. Were he never so benighted, forgetful of his high calling, there is always hope in a man that actually and earnestly works; in idleness alone is there perpetual despair. Work never so mammonish, mean, is in communication with Nature; the real desire to get work done will itself lead one more and more to truth, to Nature's appointments and regulations, which are Truth. The latest Gospel in this world is: Know thy work and do it." Let each job done be a "stepping-stone to higher things."

Young men—I know from my own feelings when a younger man—are impatient too, if what they feel is good work is not immediately awarded a "prize." That is unwise, because I have said I am certain the reward will come unerringly, even if we cannot at once point to it. The reward may be latent, and with the addition of yet a little more good work may suddenly, and often quite unexpectedly, burst into steam. Recollect, however,

The noblest service comes from nameless hands,
And the best servant does his work unseen.

One last word—and it is of great importance to engineers—know your workmen, under-

stand their characters. You will have to superintend many men in later life. The workman, of whatever rank, is a real good fellow when you know him and get below his shyness and fear of being patronised and "put upon." In that delightful book of G. H. Lorimer's, the self-made merchant tells his son: "Keep close to your men. When a fellow's sitting on top of a mountain he's in a mighty dignified and exalted position, but if he's gazing at the clouds he's missing a heap of interesting and important doings down in the valley. Never lose your dignity, of course, but tie it up in all the red tape you can find around in the office and tuck it away in the safe. A competent boss can move among his men without having to draw an imaginary line between them, because they will see the real one if it exists." "Authority swells up some fellows so that they can't see their corns, but a wise man tries to cure his own while remembering not to tread on his neighbour's." There is a good deal of good sound common sense in that. I can sum it up thus: That you should work hard and seriously. Be wise enough to take advantage of every opportunity that comes your way. Try not to be too impatient about achieving success immediately, because, speaking from my own experience in life, you will find that success will come, as I have said, unerringly. It will come sooner or later, but it will come to those who deserve it.

THE BOARD OF EDUCATION SCHEME FOR THE CO-ORDINATION OF EXAMINATIONS.

(Continued from p. 209.)

L.C.C. EDUCATION COMMITTEE.

THE proposals of the Board of Education outlined in Circular 849, in reference to the examination of the pupils of grant-earning secondary schools, have been considered by the Higher Education Sub-Committee of the London County Council Education Committee. In its report the Sub-Committee makes the following observations on the Circular:

The proposals will have far-reaching effects on the secondary schools. One effect will be to divide schools definitely into two (or possibly three) grades—(i) Those taking both examinations; (ii) those taking the first only; (iii) (possibly) those unable to reach the standard of either. Schools in the third grade will presumably be removed from the list of grant-earning schools.

The requirement that a whole form shall be presented for examination rather than selected

pupils is sound and should tend to prevent neglect of the less clever pupils.

It would appear to be the desire of the Board to minimise the number of examinations taken in any one secondary school. This, however, will not be effected unless the universities and professional bodies agree to accept each other's examinations, and unless the examinations are also accepted by the Civil Service Commissioners and the more important municipal bodies as qualifying for admission to the public services. No mention is made in the circular of the preliminary certificate examination of the Board of Education, but we understand that it is not to be discontinued.

The prohibition of junior examinations corresponds to some extent with the policy adopted by the Council in regard to the payment of examination fees for its own scholars. The Council has never paid fees for examinations of the grade of the preliminary local examinations of Oxford and Cambridge, and in the case of examinations of junior grade it is only prepared to pay the fees in the case of an examination such as the junior examination of the University of London where a whole form is presented. As the quality of the scholars and the efficiency of the schools improve it should become possible for practically all scholars to pass an examination of the senior grade, that is, an examination similar to the first of those referred to in the Board's circular, before leaving school at the age of 16+, and the junior examination should therefore be dropped.

The principle of having easy papers and a high standard of marking appears to be sound, and also that of fixing the standard for a pass in such a way that pupils of reasonable industry and intelligence in an efficient secondary school can attain to it.

The proposal to admit to the examinations all candidates under 19 years of age, whatever their previous education may have been, appears to be unfortunate. It is, of course, very desirable that some door should be left open for persons who, in spite of the ample provision for free admission and maintenance scholarships, have not been able to receive a secondary education, but the external matriculation examination provides such a door, and there appears to be no reason why candidates who have not attended secondary schools should be admitted to examinations specially designed for such schools.

The right to submit special syllabuses is of great value. It should not be allowed to become a dead letter. This is likely, if, as seems inevitable, a special fee is charged to meet the cost of preparing special papers, un-

less the Board undertake to increase their grant to meet this extra expense.

The Education Committee has made the following recommendations to the London County Council:

(a) That the Council is unable to express its approval of the proposals of the Board of Education in regard to examinations in secondary schools, as embodied in circular No. 849, as a whole, for the following reasons:

(i) The proposed examinations would prove ineffective and redundant if established before university, public and professional bodies generally have accepted them in lieu of their own entrance examinations, and the Board of Education themselves have accepted the first examination as alternative to the preliminary certificate examination.

(ii) The principle of admitting individual students to the examinations without any regard to their place of education or to the circumstances of secondary school provision in a district would counteract any improvements effected by the remaining portions of the scheme.

(iii) The arrangement proposed in paragraphs (x.) and (xvi.) of the Circular would tend to undue centralisation and restriction of local initiative.

(iv) The limitation of the examination by school forms to schools which accept the Board's grants or inspection would discriminate unreasonably against schools unable for legitimate reasons to do so.

(b) That the Council welcomes the efforts of the Board of Education to minimise the number of examinations in any secondary school, and approves the proposals relating to—

(i) The requirement that a whole form should be presented for the examination.

(ii) The prohibition of junior examinations.

(iii) The fixing of a standard for a pass in such a way that pupils of reasonable industry and intelligence in a secondary school can attain to it.

(iv) The right of schools to submit special syllabuses.

We have also received the following contribution to our symposium on the Circular:

By D. FORSYTH, M.A., D.Sc.

Principal of the Central High School, Leeds.

1. *Is it desirable that every grant-earning school should be compelled to submit to an external written examination every year?*

Yes: for students who have completed a course of four years (at least) in the Secondary Department at school.

2. *Would the institution of a scheme of official leaving certificates have an adverse*

influence upon individual work either of teacher or pupil?

Not if the examination is based on the school curriculum, and "Matriculation" be used as a *standard* of qualification. Matriculation of the Joint Board of the Northern Universities provides three stages: *first* and *second class*, distinctions, and higher papers: and therefore, the variety of talent in a Fifth Form is recognised. No doubt the prescribing of set books does interfere with the liberty of the teacher, but these are generally well selected.

3. *Is it reasonable to ask all efficient schools to present a whole Form for the First Examination?*

Yes: but the examination should not be of one type, should be in accordance with the curriculum (or curricula) of the Form, and should suit the capacity of the student. The same examination papers for all students in a Form would lower the standard of the examination. Such a compulsory examination is to secure an estimate of the attainments of each individual in a Form, and grades of papers are needed.

4. *Ought girls to be expected to take precisely the same examinations as boys?*

No: but they should be of the same standard, as such examinations are utilised for selection in scholarship competitions; and therefore there must be no "soft opinions," and the papers should be set on the curriculum.

5. *Are the Universities the most suitable examining bodies?*

No: unless there be on the Board, and as examiners, a much larger proportion of experienced teachers. As Matriculation is the entrance examination for the Universities it is of the utmost importance that the examination should be by the Universities' Board (a) as a test for admission, and (b) as a means for estimating the possibilities of students in University courses.

6. *Is an interchange of certificates among Universities for various purposes feasible?*

Yes: London University and the Northern Universities do interchange.

7. *Is it possible to persuade the various professional bodies to accept the certificates proposed by the Board?*

Yes: many of the professional bodies have raised their standard, and are urging students to take Matriculation as their preliminary examination. Many have, however, to set lower qualification papers in order to obtain candidates.

8. *Ought not the Civil Service Commissioners as a matter of course to accept the Board of Education certificates?*

Yes: as a preliminary test to a special examination. This would secure candidates who were either Secondary pupils, or were trained (not coached) to the Matriculation standard.

9. *Is the proposed representation of acting teachers on the Advisory Committee the Board proposes to establish adequate?*

No.

ASSOCIATION OF HEADMISTRESSES.

At the annual conference of the Association of Headmistresses held on June 11th and 12th last, the following resolutions were adopted:

That the Association of Headmistresses welcomes the scheme of reform in examinations outlined in Circular 849, provided that the regulations are not made rigidly compulsory and that reasonable freedom of action be reserved to the school authorities.

That it is desirable that: (a) the unit for the first examination should be a whole form and not selected pupils, but that (b) liberty should be reserved to the head of the school to exempt pupils from the examination.

That in regard to the second examination, this Conference earnestly desires that it should be permissible, but not compulsory, to take the examination in two parts and in successive years.

That success under approved conditions in the second examination should exempt from University Intermediate Examinations, including the First Medical Examination, but without curtailing the length of the University Degree course.

That universities, local education authorities, and other bodies, be requested to take into consideration how far they could utilise the second examination, in whole or in part, in the award of their scholarships.

That the Association of Headmistresses attaches the greatest importance to the adequate representation of teachers on the Advisory Committee and on Examining Bodies.

EDUCATION IN SCOTLAND.

THE Annual Report of the Committee of Council on Education in Scotland, which has just been issued (Cd. 7928), is, as usual, a suggestive document, and abounds in material of interest and value to the student of educational progress. The report is essentially a war number, and bears on almost every page evidence of the great conflict in which this nation is now engaged. Of the total number of male teachers in the country it appears that more than one-seventh have volunteered for military service. Great gaps

have also been made in the ranks of janitors, drill instructors, attendance officers, and clerks. Members of school boards have rallied to the flag in considerable numbers, and the chairman of the Edinburgh School Board, the gallant Colonel Clark, C.B., has already fallen at the head of his regiment, the 9th Argyll and Sutherland Highlanders. The newly-created medical services have likewise been depleted seriously, and it seems certain that in the near future still further demands will be made upon them. Fortunately, temporary measures are being arranged to secure the adequate medical supervision of all seriously affected children. Government departments have in some cases been severely criticised for failing to release a greater number of their staff for war service, but this charge cannot be made in the case of the Education Department, which has no less than 33 per cent. of its total staff serving in the army.

The statistics given in the appendix to the report show that there are 3171 primary schools in the country giving accommodation for 1,058,809 pupils, and 195 higher grade schools with places for 41,029 pupils. It is disappointing to find that the decrease in the number of pupils on the school roll, which began in 1910-11, still continues. In that year the total average roll was 847,984. Since then there has been a steady annual decrease of about 1500, making the total roll for 1913-14 843,309. This decline in numbers is due partly to emigration and partly to the steady decrease in the birth-rate that has marked the past ten or fifteen years. In so far as these are the result of economic and social conditions they deserve and demand the earnest consideration of our statesmen and legislators.

The present report continues the admirable practice of its predecessors of passing in review the main questions that have been agitating educational circles throughout the year. The light that is thereby shed upon thorny problems is not always distinguishable from darkness, but the frankness with which defects are recognised and difficulties admitted, as well as the transparent sincerity of the efforts for their removal, are full of promise for the future. The position of supplementary courses is a case in point. The supplementary course has been described as "the coping-stone of the structure of primary education." It represents the attempt to add reality to the work of the primary school in its later stages by setting aside some time for correlating what has been learned already to its practical bearing on the probable future occupation of the pupil and the employment of his leisure time. The report admits that the importance

of these supplementary courses has not been recognised fully by managers or by parents, and inferentially places the blame upon them. The real culprit, however, is the Department. By its regulations in regard to staffing, grants, and numbers in classes it has placed the badge of inferiority upon the supplementary as compared with the intermediate course, so that the distinction between the two has come largely to be social and not educational. The prestige of even a short term in an intermediate school carries with it certain well-defined advantages which do not belong to a complete course in a supplementary school. Parents and pupils are wise enough to see where their best interests lie and avoid the supplementary course wherever possible. The conception of the supplementary course is excellent; it is only on the practical side that it fails, and here it should be easy to adjust matters.

The question of the cost of school buildings also comes up for review. It is pointed out that many buildings, which structurally are still in good repair, have become totally inadequate educationally owing to the steady rise in the standards of health and comfort and the great development in teaching methods. The hope is expressed, and will be very generally echoed throughout the country, that the experiments now being made in connection with the building of special schools for defectives may result in the evolution of a type of building which will cost less than the present schools, will be at least as serviceable while it lasts, and will not go out of repair before it is out of date in other respects. In view of the probable financial stress at the close of the war and for many years thereafter, the cost of school buildings is likely to become an urgent question, and architects would do well to apply themselves to this problem in good time.

Those in close touch with education in Scotland will not be prepared to endorse the complacent statement in the report that "the existing centres do bring the opportunity of secondary education within the reach of practically every capable child in Scotland." As a matter of fact, there are thousands of children in Scotland who by the present system are denied all access to higher education. The system of central secondary schools has proved an enormous boon to the urban population, but it has correspondingly depressed the prospects of the poor rural child. The bursaries available are too few in number and too small in amount to meet the needs of the case, and it is precisely in those districts which are most necessitous and most remote that they are fewest and smallest. The rural child has ever been the "stepbairn" of the Education Depart-

ment, not intentionally, it will readily be granted, but because the department insists on treating him as if his case was on all fours with his urban fellow. Until the department tackles this question on the lines adopted by the Insurance Commission in connection with medical services in the Highlands and Isles, there is no possibility of justice being done to the most necessitous and, in some respects, the most deserving portion of our population.

The following extracts will serve to give some idea of the variety and the interest of the subjects dealt with in the report:—

THE AGE LIMIT AND EXEMPTIONS.

The Education (Scotland) Act, 1901, which obliged all children in normal circumstances to continue their education up to the age of fourteen and abolished the previous system whereby a child could obtain freedom to leave school and become a wage-earner by passing an elementary educational test, empowered school boards to exempt children above twelve years of age from the normal obligation. Exemptions may be granted purely at the discretion of the school board, subject to a general supervision by the Department. The practice of school boards in the granting of exemptions naturally varies considerably, directly opposite policies being sometimes pursued by boards in adjoining parishes. On the whole, however, school boards have shown praiseworthy firmness and discrimination in the performance of this part of their duties. It is noticeable that no fewer than 320 school boards—more than one-third of the whole number, 951—granted no exemptions at all in the year 1913-14.

MEDICAL INSPECTION.

Enough time has now elapsed since the institution of the present system of medical inspection for the whole existing school population to have come under its operations, except in the counties of Argyll, Orkney, and Shetland, where, for special reasons, the school authorities were late in taking up the work. Elsewhere, and even in large counties where it was only possible to deal with the children in two selected age-groups, it may safely be said that in the primary schools and in many of the higher grade and secondary schools every child now in attendance has undergone a systematic medical inspection. The most immediately apparent result of the system is the steady improvement in the standard of personal cleanliness.

EMPLOYMENT AGENCIES.

Section 3 (5) of the Act of 1908 empowers school boards to maintain or combine with other bodies to maintain agencies for collecting and distributing information as to employments open to children on leaving school. Much excellent work of this kind has always been done by teachers and managers in a more or less sporadic fashion, but the Act contemplates its concentration and systematisation on some such lines as those which have since been suggested in the Department's Circular No. 433. The pioneer of the movement was the Edinburgh School Board, whose scheme has been made the subject of study

for similar organisations, not only in many towns in the United Kingdom, but also, we are informed, in America and on the Continent. Its distinctive feature consists in the fact that the agency is conducted in the offices of the school board, and is under the supervision of an officer of the board who unites with this duty the organisation of the board's continuation classes. An alternative arrangement is that which has been adopted, for example, in Glasgow and its environs, whereby the school boards concerned devolve their responsibilities upon an advisory committee for juvenile employment, constituted by the Board of Trade in connection with the local labour exchange under the provisions of section 2 (5) of the Labour Exchanges Act, 1909.

SCHOOL ORGANISATION AND THE WAR.

The difficulties caused by the withdrawal of teachers for military service scarcely need comment. To some extent the place of the absentees has been filled by others; but it is not possible within the course of a few months to find substitutes for more than 800 teachers, and to some extent the work of those serving with the colours has fallen upon the shoulders of their colleagues remaining on the school staff, to whom full recognition is due on this account.

The occupation of school buildings for the billeting of troops or hospital purposes is an incident of the war with regard to which we have been obliged to exercise some care. By the middle of August, however, instructions were given by the Army Council which led to the evacuation of a number of schools which had been occupied by troops at first, and secured school buildings from being requisitioned in future upon insufficient authority and without full consideration of the necessities of the case. A certain number of schools have, however, been retained for hospital purposes, and in these cases special arrangements have had to be made for the accommodation of the evicted children. For the most part the difficulty has been solved by making double use of an adjoining school, one set of children attending in the morning and the other in the afternoon. This arrangement has been found to work well on the whole, but in some cases the length of the children's attendance has had to be slightly curtailed.

We can refer with pleasure to a problem of school organisation which has arisen in some few districts of Scotland, mainly in Roman Catholic schools, through the attendance of the children of Belgian refugees. School managers have everywhere been glad to welcome these children to their schools; teachers show keen interest in them and they are popular with their classmates. Except in one or two schools, they do not form groups large enough to be provided with a special teacher and they accordingly take their places in the ordinary classes; but special attention is given to them by the teachers and they are reported to be making very satisfactory progress.

CONTINUATION CLASSES.

The first Continuation Class Code, which brought together under one system the various institutions then existing of the kind and introduced the present classi-

fication of functions and scheme of grants, was issued in 1901. In the first year following its issue the number of individual students who attended continuation classes was 78,171. In 1908-9 the number had increased to 108,813. The effect of the Act of 1908 was to bring it up to 144,815 in 1911-12, and last year (1913-14) the number was 151,855. These bare figures are but a partial indication of the progress achieved. During the ten years in question the attendance at the more advanced classes has formed a constantly increasing proportion of the whole attendance, and the organisation of these higher classes and of the system as a whole has developed steadily in purpose and efficiency. While, therefore, the number of pupils taught in continuation classes has nearly doubled itself since 1901, it may confidently be claimed that the whole sum of benefit derived from the system has increased in a far greater measure.

CONTINUATION CLASS ORGANISERS.

In those urban districts where the school board have applied themselves energetically to the development of the continuation-class system for a number of years with good results, the need usually comes to be felt of an organiser whose whole time should be devoted to this part of the board's work. Indeed the scope for the activities of such an officer is so great that if, after he has once been appointed, his services are not recognised as indispensable, this can only be attributed either to failure on his part or to a too narrow view on the part of his employers of their responsibilities in relation to the youth of the district and the interests of local industry and commerce. The main function of the organiser will be, under the direction of the school board or their continuation class committee, to work as an agent between them and the employers and employees of the district, in order to establish a relation of confidence and sympathy and to secure that the classes may be such as to serve the real needs of the community and that the community may be ready to take advantage of them. It should be his duty to pay special attention to the co-ordination of the work of the continuation classes with that of the supplementary courses on one hand and of the central institutions on the other.

CENTRAL INSTITUTIONS.

The special functions of the central institutions may be said to be (1) to provide the highest form of specialised instruction in their respective spheres; (2) to focus the work of the continuation classes; and (3) to exercise, so far as opportunity offers, a directive influence over the whole field of activity which they represent. As might be expected, the war has had a most disturbing effect upon the central institutions, and more especially upon those, like the technical colleges, which are attended almost exclusively by male students. The readiness with which both teachers and taught, in large numbers, have placed their services and qualifications at their country's disposal has been very gratifying. Their withdrawal has naturally meant to the institutions themselves a serious loss of revenue from fees, and has entailed great

dislocation in the programme of work. Inevitably there has been a cutting down of the number of classes and a general restriction of development. By the efforts, however, of the remaining staff, the managing authorities have been able to maintain the major part of their organisation.

INTRODUCTORY WORK IN SCIENCE.

THE issue of the revised edition of the "Suggestions for the Consideration of Teachers and Others concerned in the Work of Public Elementary Schools," which the Board of Education first published in 1905, has now reached the ninth instalment. This part (to be referred to as Circular 904) is concerned with the teaching of elementary science, including nature study. Since the Circular is explicitly intended to furnish guidance on the general principles which should inspire the teaching of elementary science, rather than to frame schemes of work, or to draw up lists of lessons and experiments, it merits the attention of science teachers in schools of all grades.

It is encouraging to find that here, as in other instalments of the Suggestions, the Board leave it to the teacher to work out for himself and apply such methods of teaching as are best suited to the opportunities and needs of the school. The teacher is at liberty to draw upon his own hobbies—from practical mechanics to bee-keeping—for the material out of which school courses may be framed. Again, the local circumstances of schools vary so enormously that the greatest latitude in choice of subject matter must be conceded, in order to obtain the best results from the work. Elaborating this principle, the Circular gives a large number of interesting suggestions regarding the subjects suitable for study under various conditions, but avoids entering into the details which belong to the province of the teacher himself. Indeed, his syllabus "should show the character of the work rather than the amount to be done in a year," since it is impossible to say beforehand how much can be done in a given time. "But freedom implies a corresponding responsibility in its use," and the Circular makes it clear that the carrying out of the ideas suggested will entail much earnest effort. The teacher is told that his knowledge of science, so far as it goes, must be first-hand and accurate, and not entirely dependent upon text-books. He is recommended to put himself in touch with a good local naturalist, and is evidently expected to have, or to acquire, a fairly wide if not deep acquaintance with natural sciences, as well as with many of the processes of manufacture of articles in common use. It is assumed that

some of the lessons will be given out of doors and in class excursions, "and these will require at least as much preparation as the ordinary lessons in the class-room."

Having thus defined the aims and the methods of the work, the Circular goes on to consider the special needs of the junior and senior classes of elementary schools. In the former the science teaching "will have served its purpose if it keeps alive the curiosity of the children, affords them opportunities for discovering a delight in natural phenomena, and leads them to make observations which, though only superficially connected at the time, can often be put to use later in the senior classes."

The work of senior pupils should amplify and continue the earlier course. "The time for specialisation has not yet arrived"; nevertheless, the treatment of series of lessons should be more thorough, and further instruction should be of a less generalised character. This instruction of seniors is classified under three main heads: (a) the further study of plant and animal life; (b) nature study in connection with geography; (c) practical elementary science (suggested chiefly for town schools). The last-named includes practical mechanics for boys and domestic economy for girls. This part of the Circular (dealing with the science work of senior classes) is particularly rich in practical suggestions. In a final section, material for lessons, school museums, books, etc., are considered.

The declared object of the Circular, as we have already pointed out, is to enunciate the broad principles which should underlie the teaching of science to children, and many readers will recognise the deep significance of the more general remarks interspersed among the wealth of practical hints.

The following are worth special attention: "A child cannot be expected to distinguish, unaided, between the important and the unimportant, and mere random observation of a number of unrelated facts is of little or no value. . . . The problem before the teacher is to give neither too much help nor too little; it will not be solved by his giving none at all." Here in a nutshell is the complete theory of the use and abuse of diagrams: "Diagrams, pictures, and models can never take the place of the actual objects," but "the actual object may often show important and unimportant points, the latter hiding the former; while a picture, diagram, or model may emphasise just those points upon which the teacher wishes to concentrate attention." The basis of scientific method, we are reminded, "is the collection of relevant facts, the formation from them of a simple theory, and the use of this theory to suggest further ex-

periment by which its value can be tested." On the other hand, though the spirit of science is to be ever present, its formalities are to be banished or kept in the background. "The treatment of nature study in schools is apt to become too didactic, and it is especially necessary to be on one's guard against formalism at this stage (junior)." Again, "the teacher at this stage (senior) should use the technical terms of systematic botany and biology with great reserve. With few exceptions, every result of the study of nature, which is at once well ascertained and important to children, can be adequately expressed in plain English."

Subjoined are a few helpful extracts from the Circular.

It is obvious that the course of study should be framed, as far as possible, with regard to the special circumstances of the school. There are some natural phenomena which—given adequate knowledge on the part of the teacher—can be studied in any district, *e.g.*, the sky, rain, frost, dew, common plants and animals, and common objects to be seen at home and in school. But many others, often of peculiar interest, can be profitably studied only in special districts, *e.g.*, in schools situated near bogs or moors or by the sea. Again, the existence of a school garden will naturally influence the choice of subject-matter; and in urban areas a good deal turns on the facilities for visits to such places as zoological gardens, museums, and parks.

In most schools, especially in rural schools, the course is largely devoted to the study of living things—plants or animals. From the teacher's point of view plants have one great advantage, in that they can be observed repeatedly in different forms of growth at different seasons of the year.

Further, there is and always must be included in the curriculum of public elementary schools instruction on a variety of subjects, some of which have a bearing on science though they do not fall strictly within the scope of this chapter. Many object-lessons, or, as they would more correctly be called, "general information lessons," belong to this category. They deal with natural objects, but their aim is to supply useful and interesting information rather than to encourage first-hand observation and inquiry. For example, children at some stage of their school-life should learn from their teachers certain of the main facts discovered about the sun, moon, and stars, the nature of the atmosphere, the tides; but they cannot, of course, appreciate the reasoning by which these discoveries have been made or the exact evidence for them. Similarly, it will often be necessary for the teacher to give some instruction about the processes of manufacture of articles in common use, *e.g.*, glass, butter, soap, though he should avoid going into any unnecessary detail. Instruction of this kind can often be best given incidentally and not by set lessons.

For nature-study proper it is essential that the children should be able to observe and reason about the subject of study for themselves, and that full use should be made of their instinctive curiosity; but it is

equally essential that they should have some guidance and advice from the teacher as to what they are to observe.

In nearly all schools, even the younger children should acquire simple ideas of system by observing the life-history of plants grown in the class-room or of animals kept at home. It is often found that they learn more by growing and tending plants regularly and attending to the daily needs of animals than by frequent lessons about them. Similarly, they can gain some elementary notions of the cycle of seasonal changes by observations of the weather—wind, rain, frost—and of rocks and rock structures in some districts. A useful device adopted in many schools is the keeping of a nature-calendar on which are recorded regularly the children's observations on such matters as the wind and weather, the principal changes in growth of common trees, plants, and animals, and the seasonal appearance of common birds.

Some schemes of instruction for junior classes include lessons on the simpler phenomena of inanimate nature; a teacher with a knowledge of the principles of physics will have little difficulty in finding suitable material ready to his hand. He can devise simple experiments showing, *e.g.*, the result of rubbing together different materials, such as silk and glass, the rate at which water passes through flower-pots containing sand and clay, or a mixture of these, and the musical notes obtainable from tumblers containing water at different levels.

Use can often be made of the many mechanical toys available for children. Every child is keenly interested in learning how they work, or in watching such things as the formation and colours of soap bubbles, the different kinds of images in hand mirrors, the effects of prisms upon light, and the action of a magnet.

The aim of such lessons is not, of course, to give any complete explanation of the phenomena, but to lead children to observe and describe what happens, and to notice at times kindred phenomena out of school.

A scholar in the later years of his school life should be trained to look below the surface of things for reasons and principles, and the task of the teacher should consist largely in the suggestion of subjects for investigation and the direction of simple experiments. For this purpose the value of a school-garden can scarcely be over-estimated, since the ordinary operations of practical gardening provide naturally a constant variety of suitable problems and illustrations. Many teachers, for example, without using the technical terms of the man of science, have been able to give their scholars some elementary notions of the physiology of plants. They have devised simple experiments to show the effect of air, light, warmth, and moisture on the growth and behaviour of germinating seeds and plants, to illustrate root pressure, respiration, transpiration, and storage of food. Others, again, have taken up the subject of the distribution of plants according to the character of the soil, by investigation of the habitat of the common weeds. They have led their scholars to discover the association, for

example, of sheep's fescue grass with shallow soils, of couch-grass with deep and rich land, or of plants like spurrey with soils which have become "sour," and to gain clear ideas of the harmful effects of these, and such plants as charlock, upon growing crops.

In lessons taken out of doors and in class excursions, whether these take the form of a short walk in the immediate neighbourhood or a long expedition, points which have been dealt with in the class-room can be worked out in greater detail and with a more abundant wealth of material. The class should not waste time in vague observations, but should be set to notice certain definite points: *e.g.*, the flora of the hedgerow, moor, or marsh; the trees of the woodland; pond life; migratory birds.

In some schools the principal aim of the teacher has been to give his scholars some elementary notion of the scientific principles on which the facts of climate depend, and to familiarise them with the construction and use of the more common instruments employed by men of science and geographers alike.

Another type of scheme has been devised by teachers with a special interest in rock studies as related to geography: it is peculiarly suited to schools in rural districts or by the sea. There are numerous districts of the country in which a child can be trained to recognise the effects of the forces which carve out valleys, which tend to break up rocks into soil, and which cause soils to be sifted, or intermixed, or transported from one place to another. The action of running water, its rate of flow, its flood characteristics, the formation of loops and meanders; frost action on walls, or cliffs, or quarry faces; wind action on sand or loose soil; the action of waves and tides and their effect in the erosion of the coast; all these give scope for observations and inferences which are well within the powers of older scholars. Some study of the rocks of the school district will naturally be included.

Whatever may be the precise line of study adopted, it should spring naturally from the actual surroundings of the school.

PERSONAL PARAGRAPHS.

MR. FRANK NEWMAN has been appointed principal of the Battersea Polytechnic in the place of the late Dr. Rawson. Mr. Newman was for some years educational adviser to the North Riding Education Committee. His work there was similar to that of Dr. Rawson, who was director of education in Worcestershire before he was appointed principal at Battersea.

* * *

AMONG the birthday honours to men connected with education are the following: Mr. F. D. Acland, who from 1900-1903 was an examiner in the Education Department, is to be Privy Councillor; Dr. W. Peterson, principal and vice-chancellor of the McGill

University, Montreal, and Dr. D. M. Gordon, principal and vice-chancellor of Queen's University, Kingston, Ontario, have received the C.M.G. Knighthoods were conferred upon Mr. C. F. Fraser, superintendent of the School for the Blind, Halifax, Canada, and upon Dr. Thomas Muir, Superintendent-General of Education, Province of the Cape of Good Hope, Union of South Africa. The Order of the Indian Empire was conferred upon Kunwar Maharaj Singh, Provincial Service, senior assistant of the Government of India Education Department; and the Imperial Service Order upon Rai Chuni Lal Basu Bahadur, first assistant chemical examiner of the Government, teacher of physics and chemistry in the Campbell Medical School, and fellow of the Calcutta University; and also upon Mr. L. W. Stanton, secretary to the Ministry of Education, and secretary to the Education Department of South Australia.

THE *Eton College Chronicle* says:—"All Etonians will rejoice to hear that the following telegram referring to Mr. C. A. Gladstone has just been received: 'Germans dropped note, Charlie safe, though prisoner.' Mr. Gladstone left Eton for the front on August 11th, and except for a few days in January has been there ever since."

LIEUTENANT N. V. HOLDEN, 6th Batt. Lancashire Fusiliers, a master at the Manchester Grammar School, has died of wounds received at the Dardanelles. He went to the Grammar School as a boy in 1902 and was for his last two years in the classical sixth, from which he won the Somerset Exhibition to St. John's College, Cambridge. He rowed for the first Lady Margaret boat, and his rooms were the rallying-point of the newly formed branch of the Old Mancunians' Association at the University. Mr. Holden went as a master to the Central High School for Boys, and then to the Grammar School, where he took charge of a junior form, and also part of the higher history teaching. The High Master of the Manchester Grammar School writes of Lieutenant Holden:—"A man of indomitable power of work and of sterling manhood, he spent his whole life in the service of his fellow-men. In that service he died."

LIEUTENANT HUGH W. M. PARR, 5th South Stafford Regiment, was killed in France on May 15th. He was educated at Clifton College and Oriel College, Oxford. At school he was captain of the Cadet Corps, and in 1909 returned to Clifton as a master, and became tutor in the School House. In November he

volunteered for active service, and was attached to the South Staffordshire Territorials, in the battalion commanded by his Clifton colleague, Lieutenant-Colonel Richmond Raymer.

CAPTAIN GORDON BELCHER, 3rd Royal Berkshire Regiment, was killed in Northern France about May 16th. He was an M.A. of Cambridge and had been a master at Brighton College, where he held a commission as lieutenant in the school contingent of the O.T.C. He became captain in January of this year. Captain Belcher's name appeared in the list of rewards for services in connection with operations in the field published on February 19th last, as a recipient of the Military Cross.

THE Rev. H. W. Barnes, a master at Bedford Grammar School since 1886, died on June 6th. Mr. Barnes was interested in the School Corps from its formation in December, 1886, and commanded it with the rank of major from 1910 to 1912. Mr. Barnes became a housemaster in 1902, and school chaplain on the retirement of the Rev. S. B. Philpotts.

THE Council of Jersey Ladies' College has elected Miss Phyllis A. Good, of the County School, Peckham, principal in succession to Miss Roberts, who is retiring.

MISS N. NICKALLS, Oxford Honours School of Modern History, the newly appointed Headmistress of the Lady Holles School, Hackney, was educated at the Datchelor Training College, Camberwell Grove, and Somerville College, Oxford; in 1899 she obtained the Cambridge Teachers' Certificate. Miss Nickalls has been a mistress at St. Ann's Redhill, at Queenswood School, Clapham Park, at Bromley High School, and senior history mistress at the Central Foundation School; she has been headmistress of the Durham High School since 1913.

MISS M. E. WINDSOR, headmistress of the Ludlow Girls' Public High School, has been appointed headmistress of the Trafalgar College for Girls at Montreal.

THE death is announced of Miss Ellen Leicester, formerly headmistress of the Wyggston Girls' School at Leicester. Miss Leicester was for some time at the North London Collegiate School, studying educational method under Miss Francis Buss. For some years she was headmistress of Keighley Grammar School, and on the opening of the

Wyggeston Girls' School in 1877 she was appointed headmistress, an office which she held with distinction for nearly twenty-five years.

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THE REV. H. BAXTER, of King's School, Worcester, has been appointed headmaster of the King's School, Peterborough. Mr. Baxter was educated at the Bradford Grammar School and Jesus College, Oxford. He became Sixth Form master at Colston School, Bristol, in 1909, and went to Worcester in 1912.

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MR. P. H. JOHNSON has been appointed headmaster of Tollington School, Muswell Hill, N. Mr. Johnson was educated at Tollington Park College and went to the school as a master in 1896. He has for some years been an active member of the Assistant-masters' Association and is one of the authors of the new "Outlook Geographies."

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MR. P. J. VINTER, of the City of London School, has become headmaster of Archbishop Holgate's School, York. Mr. Vinter was educated at St. Paul's School and Trinity College, Cambridge. His experience has varied considerably and he has been a master at Blairlodge, at Wesley College, Sheffield, and at King's College, Canterbury.

ONLOOKER.

SOME LESSONS OF THE WAR.¹

By MARGARET E. ROBERTSON,

Headmistress, Christ's Hospital, Hertford.

SINCE I last had the privilege of speaking to fellow-workers the world has changed beyond recognition. A great gulf divides us for ever from that safe and tranquil past in which the civilised world, or the world which we fondly believed to be civilised, lay all before us where to choose, whence to draw knowledge, delight, inspiration, and that sense of fellowship among men of goodwill, in which lay and lies our best hope for the future. We stand by the ruins of the world in which we lived, as men may stand by the scene of a vast conflagration or shattering earthquake. Not yet is rebuilding possible; hardly in our own day shall we see the new Europe arise, as a Phoenix from the flames.

The field of thought opened up by the amazing events of the last year is wide as humanity itself. We are all exploring it in many directions and learning much as we go. I will confine myself to one small corner of the field, that corner which we may call our own.

What of the schools? What part have they played in the national upheaval? What strength, and

above all, what weakness have been revealed? The first blow, as we all remember, found schools and scholars dispersed for the holidays. We had to thank the President of the Board of Education (Mr. Pease) for the noble letter addressed to his "colleagues in the national service of education," which gave both help and guidance in taking up work once more under bewildering conditions.

From the first outbreak of hostilities, headmistresses with fellow-teachers have taken a share more or less according to opportunity in national work. One of our vice-presidents was among the first to organise a scheme of Red Cross work for present and past pupils, and to put it into operation. Many of our members had been enrolled long before the war, under the Red Cross Society, and were ready to take part in its manifold activities. By the zeal and energy of Miss Gray the Girls' Patriotic Union was formed in the early days of August, and under the gracious patronage of Princess Mary has been the means of guiding and promoting such useful work for the public good in schools both large and small, public and private.

And if, taking a wider survey, we look beyond our schools, never before has the work of women found such scope or such public recognition. Much fine work has been conceived, undertaken, carried through.

To those who can remember the pioneer days of medical women, the urgent appeals from public men and public bodies for their services, for an increase in their number, brings a peculiar and triumphant satisfaction. First and foremost, then, we must name the doctors, nurses, and organisers of hospitals, especially those gallant Scotswomen who have gone to the aid of Serbia in the face of dangers and difficulties which might well daunt the most intrepid.

At home the Women's Patrols have undertaken a task hardly less difficult if less hazardous to bodily life. The Women's Emergency League has justified its name by its readiness to tackle every problem as it presented itself. Up and down the country women have mustered under the Red Cross, in Voluntary Aid organisations, and have done their work ungrudgingly. And I suppose almost every woman, girl, or child in the Empire has made or given some offering for the comfort and succour of our gallant defenders on land and sea.

Then—in March of this year—came the direct appeal to women to take part in the work of the nation and so to set men free to fight for our country. To many of us this seemed to be the call for which we had been waiting.

For the war, with its searchlights turned mercilessly on hidden weakness, has revealed what some of us may have suspected uneasily before—namely, the remoteness of our schools and the training therein given, from the national life; the fact, to view it from another aspect, that in the national framework, organisation or non-organisation, schools have no definite or recognised place or function. Their preparation for life is directed to no definite end, the service of the community, the country, the Empire, is not explicitly aimed at. And so, in days of peace, the splendid capacity for service, for devotion, which our young men and maidens alike possess, dwindles.

¹ The address of the president at the annual conference of the Association of Headmistresses, June 12th 1915.

and dies down for want of a clear call to tasks worthy of such devotion and needing such service. This is, to some extent, true of all schools, but boys' schools have of late years had at least the Officers' Training Corps, and have thereby been brought into touch with one branch of national service, with the branch, moreover, which at the present moment is of primary importance. How many of us have envied our brothers in this respect! How gladly would we have guided our girls at the onset of war into some such activity by which hard work and ardent effort could be definitely and unmistakably spent in the service of our country!

Yet much as I have desired some such organisation during the past months, much as I hope that something of the kind may yet be evolved—some scheme, for instance, such as Miss Lowe has outlined, for introducing the elements of "Red Cross" work into our schools—still it would not have covered the whole ground.

We are not always—I pray that we may not be much longer—engaged in war. But the State is always with us, and surely its claims are as vital, if not as clamorous, in peace as in war. Milton's stately and philosophic definition of the aim of education strikes a pang in the conscience of most of us. Can we flatter ourselves that we are fitting men, *and women*, to "perform justly, skilfully, and magnanimously all the offices, both private and public, of peace and war"? The words gain in force and sincerity when we recall that their writer "thought it base to be travelling for his pleasure abroad while his countrymen were contending for their liberty at home"; and that he was content to use his great gifts in a lowly office for the service of the Commonwealth. Do such words fit our own efforts? Is it not true that school life and training are remote from national life? That they suffer from a lack of definite and patriotic aim?

A writer in the Literary Supplement of the Times²—surely the same writer who has earned the unspoken thanks of many for his uplifting words during these dark months—draws a picture of youth at the university, before the war, in language which may be used even more truly of schools:—

"Artificial tasks were set us or we played our games. We looked out upon life as children in the nursery look down at the street. . . . As for the struggle for life, and all those anxieties and heroisms and basenesses that come of it, we left that out of account altogether. Life was all a spectacle or a play to us."

Is not this a true picture of the children and youth of our nation on the eve of the greatest catastrophe that nation has yet known?

That acute observer, Mr. H. G. Wells, attributes this attitude of the mere spectator to our whole nation, and finds in this the explanation of our slowness to recognise the inward significance of the titanic struggle on which we have entered. But I am concerned—we here are concerned—with schools and their work, and I will confine myself to that sphere.

Our training has been artificial and unreal, we are told. We have turned out, in increasing numbers,

spectators and not actors in the drama of life. Artificial, in some measure, all training of the young must be which exceeds the simplest parental rearing. Artificial, in some measure, it should be, since young and tender plants cannot survive if exposed from the first to the free play of all hostile elements. But we have, it may be, made the common human error of mistaking means for ends, and, assuredly, absorption in what is after all an artificial world, is a dangerous preparation for life as it is.

Where have we failed? How is it that the sense of citizenship, of civic responsibility, weak in the nation as a whole, is weak in schools? Is it only to be roused and kept alive by a tremendous crisis, such as that of to-day? And are we, as lovers of peace, willing to own that peace is not only less urgent, but less inspiring in its appeal to the human spirit, than war with all its heartbreak and horror?

Some find a remedy for the defect of which I speak in direct teaching as to the duties of citizenship, in instruction in civics. Such teaching is urgently needed, is invaluable where it may be had, but I am not inclined to advocate it as a general panacea—for three reasons at least, over and above a constitutional distrust of panaceas.

One is, that I am reluctant to advise any addition to an already overloaded curriculum; another, that competent and enthusiastic teachers are at present rare; and another still more cogent reason is that such teaching, by itself, is inadequate; at best it can reach but a few. What is needed is a complete change of attitude on the part of teachers and taught alike, a shifting of the centre of gravity, so to speak, from the individual, or the little community of school, to the larger community, to the State itself.

In our earthly relations the chief sphere of woman has been held, rightly as I think, to be the home; but the oversteering of that truth often led in the past to unwholesome narrowness and pettiness in the art of life, with an impatient reaction as its consequence. To many girls at least school and college have represented a wider and freer world, in which powers, faculties, and affections find fuller scope. But has this widening brought in its turn the same danger: the danger of ignoring the greater world beyond, of being content with the achievement of small successes, with the passing of pleasant hours, the overcoming of small difficulties? And further, have we not all, in home and school alike, made present happiness and ease our chief aim? The facile aspiration of the "man in the street" who would like to "give the kiddies a good time" has been adopted, in more correct language no doubt, by too many in mistaken goodwill to the young.

We have been warned by an acute and philosophic observer that one result of the war will be an extension of the direct control and authority of the State. The nationalisation of railways and of many industries—so long desired by some and opposed by others—is an accomplished fact for a time, at least; and the prophecy is in some measure already realised. If this is the development in store for us, then, unless the autocracy of the State is to result in a soulless and irksome tyranny, the intelligent and voluntary co-

² April 8th, 1915.

operation of all citizens is essential, and training in citizenship is more than ever of importance to us all.

But for the immediate present, political and economic developments are hard to discern through the smoke of battle. What is the present task? How can we condense the ardent desire of service in our girls into that patriotism of which the Empire has most need—into that sense of common duty, of civic responsibility which will give them a worthy aim for the common life?

I do not forget—rather I would thankfully acknowledge—that the State is well served whenever a God-fearing, dutiful, capable boy or girl, clean of heart, clear of head, skilled of hand, goes forth from our schools into the world. But I maintain, and for myself, I confess with sorrow, that among the aims set before our youth the service of the commonwealth has been too little stressed, even when not overlooked altogether. *Conscious* preparation for such service has been—Heaven forgive us—limited to the preparation of a few for a written examination; beyond success in such a test, imagination scarcely ventures, or at best sees secure employment, followed in the remote future by a pension as the ultimate event. Yet, just as in the highest sphere we may humbly call all honest work and effort the service of God, so on a lower, yet still a high and noble level, we ought surely to regard all such work as due service to the State.

What, then, are the chief aims to set before us in impressing duty towards the State upon our children? What meaning are we to put into that august word—patriotism—which has even, incredible as it may seem to our Allies, acquired a tinge of discredit in certain quarters.

I think we shall learn much from considering what defects have been revealed during these months of fiery trial. On one hand we have the constant invective of our enemies, the picture held up to reprobation of England and the English. Caricature! no doubt we cry indignantly. Yes, but behind the caricature there must be some recognisable outline.

"Our bad neighbours . . . are our outward consciences,

And preachers to us all."

On the other hand, we have, amid the monotonous self-complacency of our popular Press, occasional querulous complaints, unwilling statement of unwelcome facts. And each of us has, no doubt, amid much that rouses thankful and wondering pride, known instances of failure, of poor response to the call for work and effort.

Three causes which have hindered our national welfare are surely the contempt for work and for that knowledge which can be gained only by steadfast work; an inordinate appreciation of wealth; and the lack of discipline, especially of self-discipline, making us slow to subordinate personal aims, advantage, and opinion to the common good.

Can we honestly say that these evils are absent from our schools? To take the first: we are constantly told in the enemy Press that Englishmen will not work, that they are wholly given up to sport and ease, to love of money for the sake of sport and ease

which money brings. Again and again we are told, not only by our enemies, that while Englishmen are often inventors, the patient, laborious application of invention is due to other hands and other lands. It needs no telling to assure us that an immense amount of everyday work in England is badly done—badly because half-heartedly, with no real intelligent interest. Partly this is due, I am sure, to the attitude, half-snobbish, half-noble, adopted by many teachers towards what are called utilitarian studies. If any attainment can be a means of wage-earning it is thereby suspect in the eyes of some most superior persons. If it is unlikely to be of any use, so far as any true knowledge can be deemed of no use, it thereby acquires mysterious intrinsic virtue. I am sure that this is, in part, the cause of the inordinate interest in games and sports in our schools.

The writer in the *Times* whom I have already quoted had, I think, this attitude in view when he wrote of the "old futile disinterestedness about nothing." To pursue any calling with purely selfish ends is to make it ignoble, but, on the other hand, to brand all work for profit as mere money-grubbing is Pharisaic and belittles human nature.

Distasteful drudgery has been more and more eliminated from the life of children in our schools, though it is more and more the lifelong fate of many toilers. We see the result in the shirking and scamping of much necessary work in the world. The example of thousands of recruits in the new armies shows us that the power of enduring hardness is not lost to our race. Let us seek to restore in our schools the honour due to work, hard, uncoaxed, uncomplicated work. And as an antidote of the love of money and of costly comfort we may, we must, revive in our schools the unfashionable and unpopular practice of thrift.

The waste, public and private, in recent years has been sinful and calls for judgment. At the present moment national funds are being poured out like water, and I feel sure, without imputing blame, that there is colossal waste, because habits of years are not easily corrected in a moment, nor likely to be corrected at all in periods of emergency.

It is amazing that the country, as a whole, has felt so little the pinch of need; yet the huge bill will have to be met, and we should prepare betimes to meet it. Thrift, self-denial, self-restraint, practised now by many for those on service, must be learnt and practised in our schools with increasing zeal and strictness. I would heartily support the maxim of a recent educational writer that "nothing which boys" (and girls) "can do for themselves should be done for them by paid labour."

Work and thrift are splendid instruments of discipline, and especially of self-discipline. We heard last year a vehement condemnation of discipline as hostile to all the finer elements of life. With that condemnation I sympathise so far that I believe in discipline only as a means, not an end in itself, and I hold that all discipline which does not produce self-discipline is vain.

But that girls and women of the present day are suffering—with all the nation—from grievous want

of discipline, external and internal, no one surely can dispute. Unprecedented liberty, combined with a simultaneous relaxing of parental control, of religious authority and of social convention; these causes have united to make the path of the young in our days a broad and slippery one. And further, both at home and at school the period of childhood, of irresponsibility, is surely unduly prolonged. No one wants to see old heads on young shoulders, but to shield boys and girls from all the hard facts of life, to give them no real responsibility, to ward off all disappointment, and avert the natural penalty of folly or heedlessness; this is to treat them not as children but as puppets. The experiments in self-government among children of unpromising antecedents in the "George Junior Settlements" may well put to shame the helplessness and inanity of more favoured youth.

I shall probably be told that the girls whose frivolity and folly have distressed many are not those who have passed through our schools. Let those whom this flattering unction consoles make the most of it. If we can influence only those actually in our own schools our work is narrow indeed. My own belief is that folly, frivolity, inordinate interest in dress, and absence of high aspiration are weaknesses affecting every class and assuredly permeating every school.

Work, thrift, self-discipline, no new counsels or aims. By what new sanction can we commend them more impressively, more fruitfully than before, to our scholars? Surely by that sense of duty to the State, of responsibility to the whole community which has been burnt in upon our minds in these last months, and which must not be allowed to wane with the passing of the war.

I spoke last year of co-operation and unity among teachers. Since then we have had cause to give thanks for the closing of our ranks at home; for the co-operation of classes and of masses, of our distant kinsfolk and fellow-subjects, in the defence of the Empire.

Again, is it to be thought of that this splendid spirit of brotherly devotion evoked by the war should die away or decay in time of peace? We have laboured, we still labour, to succour the sailor and soldier, the wounded, the refugee. Shall we when peace comes care nothing for the many sufferers in our midst whose wounds are inflicted for us, as truly as any now struck in battle?

We need not move far from our own calling to find a piece of national service languishing for lack of workers. The shortage of elementary teachers was serious last year. This year men teachers have enlisted in large numbers, and the position is more serious still. Can we do nothing to fill the gaps and to send whole-hearted students into the schools and colleges not merely to carry on the work at its present level, but to lift upward with fresh zeal and enthusiasm the training of the nation?

Many tasks await us, the training of the girls committed to our care so that they may help to build a new and better world is our first charge. But if our sense of duty to the State is alive and active, the

education, the vital training of all our people is the setting in which alone our own task finds true proportion and significance. We can no more be content with the prosperity of our own schools, while the elementary schools are understaffed and thereby hindered in all their activities, than we can be content to enjoy ease and safety at home without a thought of the lives laid down at the front for our sake.

David poured out upon the ground the water that had cost the lives of men—too precious to drink, to put to any common use. We valued too lightly the days of peace while they yet lasted. When, by the mercy of heaven, the days of peace return, purchased by innumerable lives, lives beyond all price, let us put them to no common use, but make peace, so hardly won, as glorious as war, with as full a sense of brotherhood and of high purpose. Let us learn ourselves and teach our children, in Florence Nightingale's noble words, to "study how to do good work, as a matter of life and death," and to "'agonise' so as to obtain practical wisdom to do it." Such work, such wisdom, the nation sorely needs. Such work, such wisdom alone can lead individuals and nations to the eternal goal.

THE ASSOCIATION OF HEADMISTRESSES.

THE annual conference of the Association of Headmistresses was held on June 11th and 12th, at the Walthamstow County High School for Girls. This is the first time that the association has held its conference in a school under the jurisdiction of a local education authority. The president, Miss Robertson, Christ's Hospital, was in the chair, and more than two hundred members were present.

The following resolutions were adopted:—

That this conference considers a survey of private schools to be indispensable to the progress of educational efficiency, and urges that such a survey should be undertaken as soon as may be practicable, with a view of drawing up a list of efficient private schools.

That this conference is strongly of opinion:—(a) That no new private school should be opened of which the principal and a proportion of the staff are not registered teachers; (b) that rate-aided schools should not be established in a neighbourhood suitably and efficiently served by existing schools.

The resolutions on the Board of Education's Circular 849, printed on p. 253.

That this conference regards the admission of specially qualified women to higher administrative posts in the Civil Service as urgently necessary to the welfare of the nation in view of the situation created by the war, and respectfully submits that the recommendations on this point of the Royal Commission on the Civil Service should now be put into effect.

That this conference, being convinced that the sound education of children under ten years of age is of vital importance to their further progress, regrets that many children attending neither public elementary nor secondary schools receive no efficient education in early

years; and recommends that preparatory departments be attached to secondary schools wherever this is possible, and that pupils in such preparatory departments be eligible for grants from the Board of Education.

That in the interests of national education it is expedient that in the award of "free places," while the majority of such places shall be reserved for children from public elementary schools, some places shall be thrown open to all children of parents whose income falls below a certain limit irrespective of the place of previous education, such free places to be included in the percentage qualifying for the grant.

On June 12th Miss Burstall presented the report of a private meeting held the previous evening of members serving on local education authorities and heads of schools under municipal and county authorities, and afterwards the following resolutions were carried:—

That while recognising the urgent necessity for increasing the supply of elementary-school teachers, especially during the period of war, this conference would regret the re-establishment of the old pupil-teacher system as a permanent part of the educational system of the country.

That an alternative qualification is desirable for junior assistant-teachers in elementary schools.

That pupils be not drafted from elementary to secondary schools above the age of thirteen without some security that they are intellectually and physically capable of reaching at least an average standard of attainment; the headmistress of the secondary school should in all cases have the right of veto.

The president then delivered her address, which is printed in the present issue (p. 260).

Miss Escott, headmistress of the Sheffield High School, was elected president for the years 1915-17. Miss Bell (Sutton High School) was elected treasurer. The following are the newly-elected members of the Executive Committee:—Miss Faithfull, Ladies' College, Cheltenham; Miss F. R. Gray, St. Paul's Girls' School; Miss Hewett, Walthamstow County School for Girls; Miss Stoneman, The Park School, Preston; and Miss McCrea, Stafford Girls' High School.

THE RETIREMENT OF SIR PHILIP MAGNUS, M.P.

THE occasion of the retirement of Sir Philip Magnus from active official connection with the City and Guilds of London Institute, after a period of service extending to thirty-five years as superintendent and secretary of the department of technology of the institute, seemed a fitting opportunity to the members of the Association of Technical Institutions, of which he was president in 1905, for the expression of the high esteem in which his work for education, and especially that in the sphere of technology, is held by the members.

An address in album form, beautifully decorated by certain members of the staff of the Manchester School of Art, with the arms of the City and University of London, and with those of the guilds constituting the institute, which was also accompanied

by personal gifts to Sir Philip and Lady Magnus of a more intimate character, was accordingly prepared, in the course of which reference was made to the many educational activities covering the whole field of education in which Sir Philip Magnus has been engaged.

The presentation of the address took place on Wednesday, June 2, in the hall of the Worshipful Company of Carpenters, London Wall, kindly placed at the service of the association, in the presence of about eighty invited guests. Sir Alfred Keogh, K.C.B., the president of the association, was in the chair. Mr. J. H. Reynolds, a former president of the association, in presenting the address on behalf of his fellow-members of the association, said:—

I feel that I am highly honoured in being invited by my colleagues of the Association of Technical Institutions to express on their behalf their feelings of respect and admiration for the guest whom we are delighted to honour this evening. There is perhaps this fitness in their choice, that I have had intimate relations with Sir Philip Magnus almost from the time of his appointment as director and secretary of the City and Guilds of London Institute, and that the school which I had the honour to represent for so many years was the most important from the point of view of candidates for the examinations of the institute, alike in respect of the number sitting and the variety of subjects taken, of any school associated with it.

I gladly accept the duty to which I am called because I at least am full of gratitude to the institute for the splendid initiative it has shown, for the munificence it has displayed, and for the great work it has accomplished since the day thirty-five years ago when with a far-seeing prescience it appointed Sir Philip Magnus as its chief executive officer, and to be the inspirer and organiser of the noble scheme it set out to achieve, namely, to encourage the establishment of means of sound training in the practical applications of science throughout the United Kingdom for the leaders of industry as well as for the rank and file engaged therein. The extent of the work accomplished is seen in the erection of the Finsbury Technical College, the first of its kind in London; in the foundation of the Central Technical College, now part of the Imperial College of Science and Technology at South Kensington; and in the establishment of the system of technological examinations which last year embraced seventy-three subjects of examination, attended by 56,000 students.

But a fruit even greater than these is found in the impulse given to the necessity for an assiduous study of science in its bearing upon industrial life and interests. Those were dark days before 1880. We had only just begun to bring the advantages of a meagre education to all the children of the nation. Continental nations, especially Germany, were making great advances, and in so doing giving rise to serious misgivings amongst our manufacturers and merchants. The great guilds of the City of London were beginning to bestir themselves and to realise the necessity and the duty of devoting some of their great

resources in promotion of the objects, it is true under new conditions, to the purposes for which they were founded, and at least one provincial university may be said to owe its existence to their munificence, not to speak of many technical schools.

So serious was the aspect of affairs that the Government appointed in 1882 a Royal Commission of Inquiry to investigate the conditions of scientific and technical instruction abroad, and the influence such provision exercised on the development of industry and commerce. Of the members so appointed we happily have with us this evening our honoured guest, Sir Philip Magnus, Sir Swire Smith, and the Right Hon. Sir Wm. Mather, and whilst absent in person, but I am quite sure present in spirit, there also remains to us our revered friend, Sir Henry Roscoe. All the others, with the exception of Mr. G. R. Redgrave, the secretary of the Commission, have passed from the scene of their fruitful labours.

The influence of the epoch-making report which resulted from the widespread and searching inquiries of the Commission was deep and far-reaching, and resulted without doubt in the Technical Instruction Acts of 1889 and 1890, the *fons et origo* of the great development in the means of technical instruction in England which ensued. In the preparation of this report Sir Philip Magnus took a notable part, and the result of the experience and knowledge gained helped materially in the development of the work of the institute under his direction.

But it was not merely in the successful establishment of a scheme of technological examinations, but in the effective help and encouragement given by the institute, through its chief officer, to the foundation of permanent institutions so equipped and staffed that they were able not only to deal with the highest aspects of science, but to show their application to industrial purposes and to keep the nation abreast of the most cultured nations.

You, Sir Philip, will remember, as vividly as I do, the lovely day of the midsummer of 1882 when beneath the grand old elms in the spacious garden of Mr. Oliver Heywood, a well-known banker and philanthropist of Manchester, you addressed a meeting of merchants and manufacturers, and offered a considerable contribution from the funds of the institute for three years if the people of the city of Manchester would convert the old Mechanics' Institution, which had done splendid work in its day, into a technical school. A sum of £10,000 was quickly raised, covering a term of years, in response to the suggestion, and that was the beginning of the efforts which in the course of time have resulted in the erection and equipment of its magnificent School of Technology, and not that alone—for it would not be out of place to say that the splendid Municipal Technical Institute at Belfast was no indirect fruit. We are often apt to forget the seed and the sower when in the enjoyment of some rich heritage, but I for one am for ever grateful that more than thirty-three years ago I made the personal acquaintance of Sir Philip Magnus. They have been strenuous years, but he and I (we are of the same age) have reason to rejoice in their fruit.

The members of the Association of Technical Institutions venture to give expression to the high esteem in which they hold Sir Philip in the address which they offer to him on his retirement from his arduous labours for the public good, and, more than this, they have endeavoured to give expression to their admiration for his fine work in the advancement of education generally—for the field of his exertions has not been confined to technology merely, but, to quote his own words: "Education nowadays is a question which affects not only the life of a few privileged, selected persons, but the entire body of the nation," and so he has made elementary education his care, and he has devoted his thought and effort also to the promotion of secondary education, and especially has he considered the importance of giving a fuller meaning to education by his strong and eloquent advocacy of the claims of manual training. He has been a member of the School Board for London, President of the Secondary Schools Association, of the College of Preceptors, of the Parents' Educational Union, of the Manual Training Teachers' Association, and chairman of the Joint Scholarships Board. He has identified himself with the whole sphere of education from the elementary school to the university, which he so worthily represents, and by his writings and numerous addresses in all parts of the kingdom he has been a fount of inspiration to those men and women who believe that in education rightly conceived is to be found the true foundation of the national well-being. As he truly said in his address as president of the Education Section of the British Association at the Leicester meeting in 1907: "Only recently have we come to realise that a democratic system of education, a system intended to provide an intellectual and moral training for all citizens of the State, and so organised that, apart from any consideration of social position or pecuniary means, it affords facilities for the full development of capacity and skill wherever they may occur, must be essentially different in its aims and methods from that under which many of us now living have been trained."

Sir Philip Magnus has at all times laid the strongest emphasis on the necessity of a sound scientific and general training as the only true and firm basis for technological study, and he has been no friend to antiquated methods or merely traditional conceptions as the best and only means of ensuring a liberal education. He is indeed at one with Goethe in his noble drama of "Faust," where he exclaims:—

"The parchment roll, is that the holy river
From which one draught shall slake the thirst for
ever?

The quickening power of science only he
Can know from whose own soul it gushes free."

It is because we feel that in our former president we have a man of broad, progressive mind sincerely devoted to the best interests of education that we venture to offer him words of cheer in his retirement from official duties, and to express the hope that he may be long spared to the advocacy of the noble cause to which he has given his life.

HISTORY AND CURRENT EVENTS.

THE entrance of Italy into the world-war sets us thinking of both modern and ancient history. In 1859 Italy was divided into several States, and the hopes of many were centred on the kingdom of Sardinia, which faced the Austrians in their hold on Lombardy and Venetia and their influence in the rest of north Italy. The story has often been told how, with the help of France, Lombardy was won in that year, but Venetia still remained under Austrian rule. In 1860, with the cry "Italia fara da si," the whole of the peninsula was united with Sardinia and became a kingdom of Italy. Englishmen sympathised with Italy in her national aspirations, and the names of Cavour, Mazzini, Garibaldi, and others were household words among us. In 1866, while Prussia was driving Austria out of Germany, Italy took advantage of the struggle to win Venetia, and in 1870 during the war between the two former allies, she completed her kingdom by the capture of Rome.

SINCE 1870 the kingdom of Italy has had a chequered history. The geographical formation of the country has perpetuated something of the centrifugal forces which made Metternich speak of her as "a geographical expression," commercial depression has led to discontent and given birth to the wilder kind of socialism, and her schemes of foreign expansion have been costly and sometimes not very successful. The last forty years have been in Italy, as elsewhere, an age of disillusion, as a brilliant essay-writer once called it, and, above all, she was driven, for the sake of security, into alliance with Prussia, now expanded into a German Empire, and with her old enemy Austria. It seemed a strange, almost unnatural alliance, and we were not surprised when at the beginning of the present war Italy did not join her Teutonic allies. Now at last she has shaken herself free, and has declared war against Austria, striking not merely for European civilisation, but to gain, when the map of Europe is once more re-made, those regions beyond of which she has long spoken as "Italia irredenta."

THE history of the constitution of a country like Great Britain and Ireland follows the development of its foreign policy, and in the present stress of war we are finding ourselves under the government of a Coalition. It is naturally impossible for us at present to know, much less to comment on, all the reasons for this change, but it has inspired many to hope that, now that both great political parties have contributed of their best to the task of managing instead of criticising the conduct of affairs, the war will progress more satisfactorily for us and our allies. *Punch* has reminded us of Macaulay's phrase, "Then none were for a party, all were for the State," and we therefore believe that this present Coalition will work better than previous examples of similar Cabinets. Since the days of Queen Anne, when party government was only coming into existence, there have been at least two instances, that of Fox and North in 1783 and the "Ministry of All the Talents" in 1806. Both were short-lived, and we refer our readers to the text-books for their history.

IN the days when Parliament as a whole was supposed to exist for the purpose of criticising the King's ministers, when impeachments and even attainders were possibilities, and when it was feared that the king might use the offices of State as bribes to members to induce them to desert their principles, there was inserted in the Act of Settlement which gave the crown to a Hanoverian house a clause which should prevent the ministers from sitting in either House of Parliament. The United States of America adopted the principle of this clause in framing their Constitution nearly a century later, and the consequence is that Ministry and Congress do not come in contact with each other. But in England this clause was modified in a few years, and it was made necessary that a member of the House of Commons should only seek re-election on accepting a "place of profit under the Crown." How completely the ideas of those now distant times have passed away may be realised by those who note the Act recently passed in two days suspending this provision for a month. Will it be ever allowed to take its place again among our Statutes?

ITEMS OF INTEREST.

GENERAL.

IN his letter, printed on p. 277 of the present issue, Mr. G. N. Pingriff, of University College School, directs attention to the compilation of laboratory notebooks by pupils in secondary schools. He discusses the disadvantages of the two common methods in vogue, viz., the single notebook in which a neat and accurate description of the work done is written in the laboratory at the time of the experiment; and the two-notebook plan, by which a pupil enters results and notes only at the time of the experiment, and a more elaborate account of the work in a second notebook during out-of-laboratory hours. As Mr. Pingriff shows, there is much to be said for both systems, and though he has decided in favour of the single notebook, we believe other experienced science masters have come to a different conclusion. We shall be pleased to receive other expressions of opinion on the subject, with a view of assisting teachers who have yet to decide which course to adopt.

THE constitution of the Board of Education has been affected by the changes due to the formation of the Coalition Government. The Board is now constituted as follows:—Mr. Arthur Henderson, President, in place of Mr. Pease; the Lord President of the Council, the Marquess of Crewe, in place of Earl Beauchamp; H.M. Secretaries of State, viz.:—Sir John Simon, in place of Mr. McKenna; Sir Edward Grey; Mr. A. Bonar Law, in place of Mr. Harcourt; Earl Kitchener; Mr. J. Austen Chamberlain, in place of the Marquess of Crewe; Mr. Asquith; Mr. McKenna, in place of Mr. Lloyd George; Permanent Secretary, Sir L. Amherst Selby-Bigge; Parliamentary Secretary, Mr. J. Herbert Lewis, in place of Dr. Addison.

THE Teachers' Registration Council has undertaken the task of compiling a list of all teachers who have

withdrawn from teaching to engage in service connected with the war. This list will not be confined to registered teachers, and it is hoped that school authorities will assist in making the record as complete as possible.

THE Teachers' Registration Council has had under consideration the position of teachers who were registered in Column B of the former register (1902-1908). Such teachers are asked to note that the Council has authorised the following announcement:— (i) Teachers registered in Column B who for any reason have not recovered from the Board of Education the fee paid on such registration will be accepted for enrolment on the present register without further payment, provided that application is made in the usual way before October 31st, 1915. (ii) Teachers registered in Column B who for any reason have not recovered from the Board of Education the fee paid on such registration, but have paid an additional fee to secure enrolment on the present Register, will be entitled to the return of the second fee, provided that formal application is made before October 31st, 1915. (iii) Teachers registered in Column B who recovered from the Board of Education the fee paid on such registration will be accepted for enrolment on the present register on payment of a fee of one guinea, provided that application is made in the usual way. (iv) Teachers applying under (i) or (iii) above are not required to submit certificates or testimonials, but the Council reserves the right to make such inquiries as it deems desirable concerning the *bona-fides* of any applicant for registration.

THE recently published report of the Board of Education (Cd. 7934) for the year 1913-14 is provided with a special preface which gives a brief account of the effects of the war on the public educational system of the country. As regards the depletion of staff, it is not yet possible to estimate accurately the proportion of the male teaching staff all over the country absent on military service. From returns furnished by local education authorities for the period up to September 30th last, it appeared that of the public elementary-school staffs 3,877 men (or 9.2 per cent. of the total number of men teachers) were occupied on naval or military service, and five women on nursing duties. The majority of the men (3,251 out of 3,869) were certificated teachers. It is probable that since the date of the returns the number serving has substantially increased; and there has been a similar depletion in the staffs of other than elementary schools. In the elementary schools the gaps have been filled to a large extent by calling up what may be called the reserves of the profession. Many qualified women teachers who left the service upon marriage have offered their services in this emergency and with very satisfactory results.

As regards the decrease in the number of students, from thirty-four universities and university colleges in England and Wales which are aided by grants from the Board, 2,530 full-time students, or about 30 per cent. of the total number of full-time men students, had withdrawn to join the Forces by the end of

January, and it may be assumed safely from the activity of the Officers' Training Corps attached to these institutions that the number will increase steadily. In the men's training colleges for elementary-school teachers (excluding university training departments) about 645 out of a total number of 1,420, or about 45 per cent., are already serving with the Forces, and it may be anticipated that others will join, if required, at the conclusion of the summer term. For the technical, art, and evening schools it is not possible to give even approximate figures; but a number of the larger institutions have estimated the drop in the number of students owing to the war at points ranging up to 50 per cent. and averaging about 26 per cent. Finally, it may be mentioned that in the Royal College of Art thirty-nine (including one Belgian student recalled to the Belgian Army) out of 152 full-time men students have joined the Colours. The number of officers and employees of the Board, including those of the museums under the Board's administration, who are serving with the Colours is 331. In addition, forty-eight officers have been seconded to the War Office or other departments for special service arising out of the war, and seven inspectors are giving part-time service.

THE 350th anniversary of the foundation of Highgate School was celebrated on June 15th. The celebrations were confined to a commemoration service in St. Michael's, Highgate, at which the Bishop of London was the preacher. In his sermon the Bishop of London referred to the fact that 600 past and present Cholmeleians are at present serving in his Majesty's Forces. The "Commemoration of Benefactors" read by the headmaster, Dr. J. A. H. Johnston, recalled the fact that the school was founded by Sir Roger Cholmeley, who was, in 1552, Lord Chief Justice, and that in 1565 Queen Elizabeth granted to him on his petition, "that thereafter there should be a Free School in Highgate, within the parish of Haringay, in her County of Middlesex, to be called the School of Sir Roger Cholmeley, Knight, for the education, institution and instruction of boys and youths in grammar and the best learning, at all times for ever to endure"; and that Edmund Grindal, Bishop of London, granted to Sir Roger "the chapel at Highgate, its site and circuit, soil and ground, with all and singular Houses and Edifices, Gardens and Orchards, and eight cartloads of wood, to be taken each year from the Bishop's Wood, also two acres of land in the waste called Highgate Common, adjoining and abutting upon the King's highway. These gifts did Sir Roger convey to the first Governors of the School, together with lands and tenements in the parishes of St. Martin within Ludgate and St. Michael next Crooked Lane, to the clear yearly value of £10 13s. 4d., whence the School is to this day supported and increased."

A copy of the report of the Decimal Association has been received. We observe that at the last annual meeting of the Association of Chambers of Commerce in the United Kingdom the following resolution was adopted unanimously:—"That the general

and immediate adoption of the metric system would be a valuable means of assisting British firms in their competition—especially with Germany and Austria—in countries where that system is in vogue, and that the Association be urged to renew its representations to the Government, and especially to the Board of Education, with that object." The new metric carat came into use in the British Empire on April 1st, 1914, and already dealers in precious stones consider it a great success. From May 1st, 1914, records of barometer readings in inches were discarded, and the absolute unit of pressure, founded on the centimetre-gramme-second (the C.G.S. system) was substituted. A further step in the direction of international uniformity is the universal introduction of the metric system of registration for rainfall measurement. In the new British pharmacopœia all weights and measures, including those referring to dosage, are in the metric system—though the equivalents for dosage are also given in the imperial system. We are pleased to be able to state, on the authority of leading pharmacists, that there is a marked increase in the use of the metric weights and measures. The report again urges upon manufacturers and merchants the need for the adoption of metric units if British trade with foreign countries is to grow. Further particulars of the work of the Decimal Association may be obtained from the secretary (*pro tem.*) of the association, Finsbury Court, Finsbury Pavement, E.C.

A NEW scale of velocity equivalents of the numbers of the Beaufort scale of wind force has been drawn up in Russia at the Observatoire Physique Central Nicolas, and expresses the wind force determined by the Wild wind-gauge in terms of the Beaufort scale. These values will be used by Russian meteorological stations as from May 1. The table has been compiled in accordance with the decisions of the International Meteorological Committee, at the meeting held at Rome in 1913.

Beaufort scale	Velocity in metres per second	Beaufort scale	Velocity in metres per second
0 ...	0	7 ...	14-17
1 ...	1	8 ...	18-20
2 ...	2-3	9 ...	21-24
3 ...	4-5	10 ...	25-28
4 ...	6-8	11 ...	29-33
5 ...	9-10	12 ...	34 and more.
6 ...	11-13		

FIVE hundred and six candidates entered for the Cambridge Higher Local Examination held in June at twenty-one home centres and two centres in the colonies. For the certificate of proficiency of modern languages nine candidates entered. The new regulations for both examinations can now be obtained from the local secretaries, or from Mr J. H. Flather, Syndicate Buildings, Cambridge.

CADET units are being organised for the grammar schools of Leicester and Leicestershire. The battalion will be described as "1st Cadet Battalion, Leicestershire Regiment," and will be affiliated with the Territorial Force. The director of education, Mr. W. A. Brockington, will serve as adjutant to the battalion.

THE American Simplified Spelling Board reports that more than one hundred of the colleges have recognised spelling reform officially. They have adopted certain simplified forms in official correspondence and publications, and have sanctioned their use by students in their written work. Among the colleges are those of the University of Missouri and the University of Minnesota.

SCOTTISH.

At the annual general meeting of the Secondary Education Association, Glasgow Branch, Dr. J. A. Third, Beith, dealt in his retiring address with defects in the Scottish educational system. Apart from the economic disabilities which press so heavily on most teachers, the fundamental defect must be looked for in the extreme amateurishness of their educational administration. The expert—the teacher in daily contact with the child—has to work under conditions which unduly cramp his freedom, and under interference from persons who are vastly less familiar with the problems to be solved than he is himself. The inherent impotence of the school board system has led to the absorption of all power and initiative by the Education Department. The teacher is left without a rag of professional freedom, and education is directed in every detail by those who have no living knowledge of school work save from the recollections of their youth. Dr. Third enumerated the following as the indispensable elements in a reformed educational system:—(1) The institution of a National Education Council on which there should be representatives of the teaching profession, the universities, and other bodies interested in education. (2) This council should be responsible for all regulations regarding schools and curricula, and should have control of the leaving certificate examinations. (3) The regulations for the training and certification of teachers should also be in their hands; and (4) local administration areas should be greatly enlarged and their membership should include a fair representation from the teaching profession.

REPRESENTATIVES of Scottish teachers have had an interview with the Secretary for Scotland in regard to utilising their services for war work during the holidays. They have prepared a register of all those who are willing to serve in any capacity, and have placed themselves at the disposal of the armaments committees and the labour bureaux, but so far without result. The Secretary for Scotland stated that he also had been making inquiries at the various departments concerned, but so far had not been able to obtain any outlet for their energies. The difficulty, of course, is that if admitted to munition factories they will only be beginning to learn their work when they will have to resume their regular duties. Personally he thought they could best serve their country at this time by helping in the ingathering of the harvest. There is an undoubted shortage of agricultural labour, and it is all-important at this time to secure the harvest as early and as in good condition as possible.

THE annual meeting of the Scottish School Boards Association was held this year in Glasgow, and was

attended by representatives from all parts of the country. The agenda was of an interesting and varied character, and the discussion was less *doctrinaire* than on previous occasions. The president, the Rev. Dr. John Smith, Partick, gave a splendid lead to the meeting in his opening address. He dealt with the war as it affected education, and compared British and German teaching methods and their results. Boyhood in Germany, he said, meant immolation on the high altar of system, and in Scotland there was a tendency to follow the German model. The central control of higher instruction in a limited number of schools, the provision of adequate equipment and competent staff, and the institution of uniform courses for all schools have given excellent results of a kind, but there is a feeling in many quarters that it would be better for the moral and intellectual life of Scotland in the future if the machinery were not quite so complete, and if a little more scope were left for the play of the workman's living touch. The election of office-bearers and other formal business brought the first day's proceedings to a close.

THE question of military training in schools led to an animated discussion at the opening of the second day's proceedings. Mr. G. W. Tait, Leith, taking as his text the unpreparedness of the country for the present gigantic struggle, made out a strong case for a reconsideration of the national attitude to military service. Dr. Dyer, Glasgow, while strongly favouring an increased attention to physical training in schools, did not consider military exercises best suited for the development of the growing boy. Besides, he considered it most unwise to bring forward the subject at this stage, when it cannot possibly receive unbiassed consideration. Ultimately this view prevailed with the majority, and the matter was held over for discussion in happier times. Motions in favour of setting up a National Council of Education and of releasing school medical officers and nurses from their positions for the period of the war were unanimously approved.

EMERITUS Prof. G. G. Ramsay, Glasgow, delivered an address on the war to the senior boys of Allan Glen's School, Glasgow, on the occasion of the formation of a school cadet corps. Prof. Ramsay said that Glasgow has a splendid recruiting record. The Red Cross work has won the admiration of the whole country, and its hospitals are magnificent. The secondary schools in the city have also given a splendid example of patriotism. Allan Glen's School has 642 of its former pupils serving in one or other of the Imperial Forces; the High School has nearly 1,200; Glasgow Academy, 900; Hillhead High School, 420; Kelvinside Academy, 300; and Hutchison's Grammar School, 375. The homes from which these recruits come are not military. Many of their parents would have abhorred the idea of war had it not been connected with an overpowering call of national duty.

At a meeting of Glasgow University Court the principal, Sir Donald MacAlister, reported that two of the university courts have refused the invitation

to confer in regard to the new ordinance promoted by Glasgow University regarding the preliminary examination. The principal explained that by the constitution of the Scottish universities they are indissolubly bound together, so that one can take no forward step without the approval and consent of the others. In these circumstances the Court agreed to proceed no further with the draft ordinance.

IRISH.

THE Government has published a White Paper giving the rules as to the constitution and procedure of the Registration Council to be established under the Intermediate Education Act (Ireland), 1914. The principal rules arrange for the establishment of a Registration Council, the duty of which will be to frame rules for a register of the Intermediate school teachers in Ireland. The Registration Council is to consist of fifteen members, appointed by the following bodies:—The Catholic Headmasters' Association, the Schoolmasters' Association (Protestant), the Education Committee of the Christian Brothers, the Association of Secondary Teachers, Ireland, the Association of Secondary Teachers, Ireland, Women's Branch, the Central Association of Irish Schoolmistresses, the Board of Intermediate Education for Ireland, the Department of Agriculture and Technical Instruction for Ireland, the Governing Body of Trinity College, Dublin (University of Dublin), the Senate of the National University of Ireland, and the Senate of the Queen's University of Belfast. The Intermediate Board will appoint five members, and each of the other bodies one member. Members are to hold office for three years, but the members first appointed are to hold office until January 1st, 1920. Members may be re-elected. The council must hold an annual meeting in the month of January in each year, and shall present an annual report to the Lord Lieutenant. The quorum of the council is to be four, and an officer of the Intermediate Board nominated for the purpose by the Assistant Commissioners is to act as secretary. A draft of the proposed regulations for registration is to be presented to the Lord Lieutenant for his approval before they come into operation.

UNIVERSITY COLLEGE, DUBLIN, in the National University, announces a vacation course for August, 1915, in connection with the Department of Education. The course will last from August 3rd to August 14th, and the professor of education, Dr. Corcoran, will give two consecutive lectures daily, beginning at 10 o'clock. There will also be a tutorial class in the preparation of materials for class work, and this will be held daily at an hour to be arranged to suit the convenience of those desiring to attend. Cards of admission to the course can be obtained free of charge from the secretary of University College. The subject-matter of the course will consist of eleven lectures on the teaching of geography, especially the geography of Ireland, particular attention being given to the correct use of local geography, the racial geography of Ireland, and composition on geographical subjects, and eleven lectures on the teaching of history, especially the history of Ireland, and the following subjects will

be treated :—The Norsemen in Ireland and in Europe; the Normans in Ireland and in Europe; the Pale (1250–1550); the land question in Irish history (1170–1870); and composition on historical subjects.

THE Department of Education in University College also announces the following arrangements for courses for diplomas and degrees for the session beginning October 12th. There will be three lectures each week for the diploma in education (open to trained teachers only), covering the whole course. For the higher diploma in education (open to graduates only) five lectures each week on theory, history and organisation, and five demonstrations in method, covering the whole course, and also for the degrees of M.A. in educational science, two lectures each week on selected branches of the course.

THE Department of Technical Instruction announces that it will in September award not more than three scholarships tenable at the Training School for Lace and Sprigging Teachers, Enniskillen, to girls having a satisfactory education and some proficiency in crochet work or sprigging. The scholarships will be of the value of £25 each, tenable for one year. The examination will be held at the Metropolitan School of Art, Kildare Street, Dublin, and at the Technical School, Enniskillen, from September 7th to 9th, in the following subjects:—crochet work or sprigging, English, arithmetic, and drawing. Candidates must be twenty years of age, and have been born in or resident for three years in Ireland. Applications must be made to the department not later than August 20th.

THE Lord Lieutenant has appointed as new Commissioners of National Education Mr. Robert Donovan in place of the Lord Chief Baron, resigned, and Prof. W. E. Thrift in place of Mr. E. J. Gwynn, resigned.

WELSH.

THE conference held at Llandrindod on May 20th between the Central Welsh Board and representatives of the Board of Education, the Welsh local authorities, and the teachers' associations, revealed very clearly the direction of Welsh opinion, though no definite expression of that opinion was published. The proposals of Whitehall with regard to Wales differ chiefly from their English proposals in substituting for the junior examination of the Central Board a record book, to consist of the usual terminal reports drawn up by the whole staff and bound together. The chairman, Alderman D. H. Williams, opened the conference with an address, pointing out that many parts of the proposed scheme are already in operation in Wales: the central body for correlating and examining, the co-ordination of examination and inspection, and the consultation of teachers on matters of syllabus and examination. Sir Harry Reichel opened a discussion on the abolition of the junior examination, which he advocated, and Miss Mason, of Friars Girls' School, the president of the County Schools Association, opposed, in a paper which was very favourably received and punctuated with applause. At first the discussion threatened to become somewhat heated, the

Vicar of Holywell attacking the Central Board and all its works, and denouncing it as a hollow sham, while Alderman Morgan Thomas retorted that if the rev. gentleman had no better opinion of the Board he sadly needed educating himself. Both speakers were called to order, and the proceedings became calmer. The feeling of the majority of those present was evidently in favour of retaining the examination. However, Mr. O. M. Edwards and Mr. Wm. George, skilfully laying stress on the fact that some speakers had advocated its abolition, induced the meeting to refrain from passing a formal resolution on the subject.

At the evening session there were discussions as to the position of the teachers with regard to the examinations and to the co-ordination of English and Welsh examination standards. The only definite outcome of the whole conference was a resolution moved by Alderman S. N. Jones, that the Board of Education should be urged to postpone all action until after the war.

At the half-yearly meeting of the Central Board held on May 21, Mr. Wm. George proposed a resolution asking for a public Government inquiry into the state of education in Wales, but urging that it should be postponed until after the war, and that meanwhile no important alterations should be made. A request for the representation of assistants on the Central Board, made by the Incorporated Association of Assistant-masters, was referred to the reorganisation sub-committee, with the instruction that it be favourably considered.

THE Welsh Agricultural Council sent a request that the Board should make it possible for instruction in agriculture to be given in intermediate schools situated in rural districts. It was decided to form a consultative sub-committee to report on the subject. The temporary chief inspector, Mr. William Edwards, was welcomed, and high appreciation was expressed of the services rendered to Welsh education by the retiring inspector, Mr. Owen Owen—an appreciation which it is hoped will take a more tangible form.

TEACHERS have little excuse for failing to see where their duty lies: their profession is the only one to which all outsiders consider themselves at liberty to dictate; and good advice for their benefit is seldom lacking. Speaking at a meeting of the Monmouthshire Chamber of Agriculture, Mr. D. E. R. Griffiths said that throughout the country there are 100,000 teachers who will soon be let loose for a holiday. Instead of going to Llandrindod for a course of saline and love-making, they could do themselves good by a course of buttermilk and haymaking!

ADVICE from outsiders is also always forthcoming on what teachers should teach and how. Two instances: Prof. Armstrong said in an address at Cardiff:—"One of the many suggestions made, he believed, was that they should undertake the manufacture of agricultural machinery in the Cardiff and South Wales district. If they desired to do that they must see to it that the general average of intelligence was raised in their schools; that not only English and

French but Spanish and Russian were taught in place of Latin and Greek. They must put a stop to the rot that was talked about the superior educational value of the two languages"; and a South Wales paper, commenting on Mr. Henderson's appointment, says that Labour looks to him to save the country by converting every secondary school into a technical college. The *Welsh Outlook* for June publishes a brilliant answer to Prof. Armstrong so far as Latin and Greek are concerned; whatever may be his authority on the subject of the usefulness of Spanish and Russian to agricultural implement-makers, he shows little knowledge of the methods and attainments of Welsh schools; in fact, from the point of view of education, both the opinions quoted are outside opinions.

THE Dowlais School dispute, which has had many phases and raised many side-issues, bids fair to be settled at last by the transference of the teacher involved to another post; it arose in the first place from a political action by the teacher in opposition to a manager of the school; it will be well if it directs attention to the fact, which is often forgotten or ignored, that teachers are also citizens, whose opinion is as well worth having as that of most others, and that many teachers are also ratepayers and even—though not the majority of them—income-tax payers.

A CASE of punishment for offences committed outside school was heard at Tredegar on June 1. A boy had been punished by the headmaster of an elementary school for throwing stones and striking a girl. The boy's mother came to the school and questioned the master's right to punish; this right was upheld, and it was mentioned on the authority of a circular issued by the County Education Committee that there were fifteen or twenty children in the county suffering from injury to their eyes caused by stone-throwing.

THE Report of the Board of Education on the working of the Welsh Intermediate Education Act for 1914, just issued, shows that the number of pupils in the schools continues its recovery from the decrease of 1909-10. There is an increase of 664, or 4.9 per cent., that for the previous year being 311, or 2.4 per cent. There are now 100 schools—since the inclusion of Mountain Ash and the division of Aberdare, Barry, Pontypridd, and Porth—with 14,192 pupils, 6796 being boys, and 7396 girls. There are 76 headmasters, who receive an average salary of £377, and 24 headmistresses, with an average of £324; 363 assistant-masters, with an average salary of £156, and 350 assistant-mistresses, receiving on an average £126; 16 masters and 61 mistresses receive less than £100 a year! It is not stated whether any of these are included in the three masters and 18 mistresses who receive "some addition to the salary" in the shape of board and residence. There are some statements bearing on reform of teaching, organisation, and examination that are hardly likely to pass unchallenged; for instance, that "the junior examination has now become a hindrance to the best teachers, and has become unnecessary. . . ." This is contrary to the opinion of seven-eighths of the teachers in intermediate schools.

THEORY AND PRACTICE OF EDUCATION.

- (1) *The Schools of Mediæval England*. By A. F. Leach. 349 pp. (Methuen.) 7s. 6d. net.
- (2) *Dissenting Academies in England*. By Irene Parker. 168 pp. (Cambridge University Press.) 4s. net.
- (3) *What do We Mean by Education*. By J. Welton. 257 pp. (Macmillan.) 5s. net.
- (4) *Educational Values and Methods*. By W. G. Sleight. 364 pp. (Clarendon Press.) 4s. 6d. net.
- (5) *School Discipline*. By W. C. Bagley. 259 pp. (New York: The Macmillan Co.) 5s. 6d. net.
- (6) *Canadian Essays and Addresses*. By W. Peterson. 373 pp. (Longmans.) 10s. 6d. net.
- (7) *Seguin, and his Physiological Method of Education*. By H. Holman and A. L. Baker. 309 pp. (Pitman.) 5s.
- (8) *The Education of Karl Witte*. Edited by H. A. Bruce. Translated by L. Wiener. 312 pp. (Harrap.) 4s. 6d. net.
- (9) *Towards Racial Health*. By N. H. March. 326 pp. (Routledge.)
- (10) *The Next Generation*. By F. G. Jewett. 235 pp. (Ginn.) 3s. 6d.
- (11) *Education through Play*. By H. S. Curtis. 359 pp. (New York: The Macmillan Co.) 5s. 6d. net.
- (12) *How to Teach American History*. By J. W. Wayland. (New York: The Macmillan Co.) 5s. net.

(1) THE appearance of Mr. Leach's attractive volume on the schools of mediæval England is an event of importance to the student of our educational history. As the author justly claims, his is the first attempt at an account of English schools before the Reformation. Until recent years it was commonly thought, even by professed historians, that there were practically no grammar schools in England before the reign of Edward VI. Mr. Leach, in his various writings, and especially in the "Victoria County History," has thoroughly exposed this fallacy. But the results of his laborious researches were so scattered as to be accessible only to the very diligent and keenly interested reader. In this volume, which belongs to Messrs. Methuen's series of "Antiquary's Books," he brings his material together in systematic form, though most unfortunately the plan of the series has precluded references to authorities. The title of the series applies with perfect fairness to Mr. Leach's contribution. He is here rather the antiquary than the historian. He gives a mass of interesting details about individual schools, but only now and then permits himself the broad and comprehensive survey that one looks for in history rightly so called. Only now and then, too, does he give us a glimpse of what must have gone on inside the schools of which he tells us; he tells us about schools rather than about education. But it is useless to ask for what no man can at present give. The time is not yet come for the history of English education to be written, but Mr. Leach has brought that time sensibly nearer. We sometimes wish he were a pleasanter person to differ from. He trounces Prof. Pollard and others rather unmercifully, but we suppose that this is only the ardent antiquary's way.

(2) Another book bearing upon the development of English education is Miss Parker's careful, sympathetic, and most interesting account of the dissenting academies of the seventeenth and eighteenth centuries. The Restoration, and the repressive legislation connected therewith, had a disastrous effect upon education, for independence of thought and action were crushed out of the schools and universities as well as out of the church. The redeeming feature was the rise and spread of the dissenting academies,

through the efforts of men like Doddridge of Northampton. But, as Miss Parker remarks, these institutions not only gave an education to dissenters; they gave a "dissenting education." For in opposition to the prevailing curriculum, which was purely linguistic, they carried on the Puritan tradition whereby "real" studies, such as geography and history and science, received due attention. Miss Parker's excellent piece of work shows how this "realism" arose, and how the dissenting academies kept alive, during an otherwise barren period, the idea of a generously conceived curriculum.

(3) Of recent books on the theory or philosophy of education, the first place must be assigned to Dr. Welton's monograph on the meaning of education. Here we have Dr. Welton at his best. For many years he has thought much and written much on his subject, but in this expression of his matured opinions on fundamentals we do not find the hard intellectualism which, we think with justice, we have been accustomed to associate with his name. He realises that "the end of education is the development of full and effective personality," and that "man's ultimate end is spiritual." He gives also an admirably balanced view of the main agents of education: the family, the Church, the State, and the school. Nothing could be more timely than his reminder that "a national system of education is not the same thing as a State system of schools," and that "it is only through confusion of thought that they can be identified." Timely also is his weighty pronouncement on the value for educational purposes of psychological experiment; indeed, he is so careful to emphasise the limitations of that method that we cannot but suspect him of undue lack of sympathy with workers in the experimental field. But the book as a whole is replete with mellow wisdom, and we hope it will be widely read.

(4) Not even Dr. Welton would, we think, deny the value of the experimental method as exemplified, for instance, in Dr. Sleight's book, the next on our select list, though he would not go all the way with Prof. Spearman, who contributes a preface that is perhaps somewhat superfluous. Dr. Sleight delivers one of the ablest attacks we have yet seen against the theory of "formal discipline," *i.e.* the theory which asserts that mental power, however gained, is applicable to any department of human activity. If that theory is true, then the extreme claims made for the traditional classical "grind" may be justified, and modern reforms of the curriculum may be all a mistake. Dr. Sleight reviews the experimental evidence, shows how far, and in what sense, the theory of formal discipline is true, and reaches the definite conclusion that "intrinsic value" is the only safe principle upon which the selection of the material of instruction can be based. Some constructive suggestions complete what we regard as a very sound and real contribution to the literature of the subject.

(5) Turning now to the more immediately practical side of education, we take Prof. Bagley's new book. This writer's works are now so well known in English training colleges that a new volume would be secure of a welcome, even if it dealt with a less important problem than that of school discipline. No doubt English and American conditions differ a good deal in regard to this aspect of the teacher's function; but Prof. Bagley's treatment goes so far to the roots of the matter that superficial differences pass out of view, and the book may be commended as a mine of suggestions for our own younger teachers. The "unruly school" is first described; then several chapters are devoted to the problem of transforming such a school; and the later chapters deal with rewards and punishments, the "troublesome types," and the dangers of basing a theory of discipline solely upon the doctrine

of interest. Each chapter is followed by a set of suggestive topics for discussion.

(6) The collection of "Canadian Essays and Addresses," issued "as a memorial volume" by the distinguished principal and vice-chancellor of McGill University, falls into two parts, the first set relating to imperial and the second to educational subjects. It is with the latter that we are chiefly concerned in these columns. Perhaps we get Dr. Peterson at his best when he is talking about university education, and especially in his racy talks to business men about the functions of a university situated in the midst of a great commercial community. The speaker's long and varied experience, his manifest insight, and the combined charm and vigour of his style, make these addresses well worth reading in other places besides Canada. We observe that whilst Dr. Peterson naturally enters a strong plea for classical studies, his broad tolerance and his sympathy with modern conditions bring him to the sane conclusion that though these studies are not for all, yet no naturally gifted person must suffer for lack of opportunity.

(7) The remarkable impression which has been created by the Montessori propaganda in this country, both among teachers and among the general public, makes it most desirable to inquire into the antecedents of the "Montessori method." We are therefore glad that Mr. Holman has published the results of his exhaustive study of Seguin, to whom Mme. Montessori fully and constantly owns her indebtedness. In an exposition of this kind, Mr. Holman has had a proper opportunity for giving full rein to his habit of frequent and lengthy quotation, and the insertion of long passages from Seguin himself adds greatly to the value of the book. Seguin sought to physiologise education, as Pestalozzi sought to psychologise it. Whether the "physiological method," which had its origin in the treatment of idiots, is likely to become dominant in the education of normal children, time alone can show. We have our doubts. Meanwhile, Mr. Holman has done a useful service in providing teachers with the opportunity of studying the method by sitting at the feet of Seguin.

(8) It is a far cry to the next book on our list, and we confess we have enjoyed the piquant contrast between the views of our most popular reformers, and the views of the father of Karl Witte, who, thanks to the parent's zealous efforts, received the doctor's degree at Giessen at the mature age of thirteen. The elder Witte believed in beginning betimes, and he honestly believed that his son was not abnormal or precocious. But if the editor of this book really agrees with this opinion, why drag in Lord Kelvin and J. S. Mill as further examples of the results of beginning betimes? They were certainly not normal specimens of mankind. Again, a system of education which belittles the value of the play and companionship of other children surely stands self-condemned, even though it eventually produced a German professor. There are many sensible remarks in the book, especially on the teaching of languages. But there is also a lack of humour which would have amazed us, had we not known the nationality of the author.

(9) More than once in recent months we have had the duty laid upon us of directing attention to books and papers dealing with the problem of sex training for the young. That the importance of the subject is equalled only by its difficulty is, we think, again exemplified in Miss March's book, "Towards Racial Health." We quite agree with Prof. J. A. Thomson, who in his foreword expresses the opinion that Miss March has made a notable contribution to the subject, for her treatment is simple, clear, and withal delicate. So long as she is informing the teacher or

parent she is excellent. But when the question comes how much it is necessary or desirable to tell children, our difficulties begin. The suggestions given by Miss March in Appendix I. must, we think, be taken with even greater caution than the author herself thinks it necessary to administer. Still, this is, on the whole, the best book on the subject we have seen. We may add that it is well furnished with illustrations, bibliography, and index.

(10) Another book written in furtherance of the new and important eugenic gospel is "The Next Generation," by Frances G. Jewett, an American writer. In the earlier chapters the main features of the modern doctrines of heredity are clearly described, in easy and untechnical language. Then chapters on "the beginnings of the next generation" and the "marvel of growth" are followed by explanations regarding the harmful effects of alcohol upon the germ-cells, of nicotine upon the adolescent, and of alcohol as a beverage. The terrible facts relating to sex disease and its transmission are next set forth, and the final chapters deal with the problems of race improvement and race regeneration. The book is well illustrated throughout. It well deserves the attention of parents and teachers seeking more definite knowledge of the subject. The book itself is accompanied by a supplement separately printed (we scarcely know why), giving examples of the awful effects of sex disease, and some wise advice to girls.

(11) Turning to a more pleasant subject, we notice next a volume on "Education Through Play," by Mr. H. S. Curtis, supervisor of playgrounds in the district of Columbia, and a first-rate authority upon the subject. He begins with the familiar and perhaps insoluble conundrum, "What is Play?" He then deals with play from the physical, intellectual, and moral points of view respectively. Next, after a description of play in German and English schools (a description based upon a visit to Europe some years ago), he takes up, in the body of the book, the various aspects of the play movement in America, finishing with a chapter on the training of the play teacher. There is some danger in all this of over-organising play until it becomes work. At the same time, there is no doubt that multitudes of children, especially in cities, lose infinitely because they are never taught to play, and Mr. Curtis's book stands for a valuable counteractive to that evil.

(12) The volume entitled "How to Teach American History," by Dr. Wayland, professor of history in one of the American State Normal Schools, may not seem at first sight specially suitable for English teachers. But when one comes to examine it, one finds that of the thirty chapters into which it is divided, the great majority deal with topics that are of general interest to teachers of history. Indeed, we are unable to think of any fundamental matter that has been omitted. The aims of history teaching, and the use of story, biography, dramatics, dates, national songs, source books, mnemonic devices, notebooks, etc., etc., are all discussed in a simple and practical manner. The beginner in the teaching of history should profit materially by reading this book, and even the experienced teacher will find much that is suggestive.

The Continents and their People. Africa. By J. F. Chamberlain and A. H. Chamberlain. vi+210 pp. (New York: The Macmillan Co.) 3s.—This supplementary reader brings home to the mind of the child just those points which are lightly touched upon, or even omitted, in class instruction; hence its value, which is the greater by reason of the photographic illustrations. Written for American children, the book will be found, however, a useful addition to the class lending library.

RECENT SCHOOL BOOKS AND APPARATUS.

Modern Languages.

First Steps in French. By Walter Rippmann. 182 pp. (Dent.) 2s. First part in phonetic transcript, price 6d. net.

The Early Teaching of French. By Walter Rippmann. 96 pp. (Dent.) 1s. 6d. net.

Set of Four Wall Pictures. By Fred Taylor. 4s. net.

As Mr. Rippmann reminds us in the preface to the second book, it is seventeen years ago since the publication of Dent's "First French Book." It seems but the other day that occurred those fierce fights between the old and new methodists, which have ended in the general acceptance of the new method so far as the early years of French teaching are concerned. Ahn and Chardenal have given way before "reform" books.

These "First Steps in French" are intended to supplant the "First French Book." We are not sorry to see the end of that book, suitable enough for Swiss children, perhaps, but rather cumbersome and agricultural for the average town-bred child in England. It only shows the sheep-like quality of English teachers that they should have bought twenty-four editions of the book. The present work is a great improvement on it. Mr. Taylor's illustrations are very ingeniously divided into sections, and are a great advance on the old Hölzel set, although the picture on p. 17 might be clearer. The exercises, too, are more varied, and the reading matter should certainly interest the learners.

The first part of the "First Steps" has been issued separately printed in phonetic script instead of Roman type. There are extra lessons on *liaison* and *e muet*.

The "Early Teaching of French," in its turn, supplants Mr. Rippmann's "Hints on Teaching French." Instead of blowing the trumpet of the new method, he very wisely in the new book confines himself to explaining how the "First Steps" should be used. There are preliminary sections on the amount of English a child must know before French is begun, the organisation of the modern language teaching in a school, and general points on the early teaching of a foreign language. The remainder of the book is devoted to hints on the use of the "First Steps." No teacher who uses the latter book should be without its companion.

Mr. Taylor's wall pictures are very clear and distinctly cheaper than such designs usually are. They will be a relief to the teacher who has had his fill of German or Austrian material.

Compositions françaises d'après les tableaux célèbres. By Hilda M. M. Lawrance. xii+115 pp. (Arnold.) 2s.—The idea of using pictures for conversational practice leading up to free composition is familiar. Miss Lawrance has had the happy idea of selecting sixteen more or less celebrated pictures for this purpose, which she discusses with much skill and artistic insight. Her French is thoroughly idiomatic and the vocabulary introduced is extensive. If we have a criticism to make, it is that it would have been better to choose exclusively pictures representing French scenes; only six of the sixteen pictures are French. It is a pity that the reproductions in the book are in several cases so poor that it is impossible to make out the details mentioned in the text.

Classics.

The Acharnians of Aristophanes, edited from the MSS. and other original sources by R. T. Elliott. xliii+241 pp. (Cambridge University Press.) 14s.

net.—This volume is the result of a first-hand study of the MSS. of Aristophanes scattered throughout the libraries of Europe. If scholarship consist in the capacity for taking infinite pains, few more scholarly volumes than this have ever been produced, and the value of Mr. Elliott's labours must not be judged merely quantitatively, *e.g.* by the number of variants in the text at which he arrives from that of, say, the Oxford text by Messrs. Hall and Geldart; for though these may not be so very numerous or important, the result of Mr. Elliott's labours is not confined to the text of the "Acharnians." Scholars now have in this volume in most accessible form a handy storehouse of information upon the MSS. of Aristophanes as a whole. Both in his introduction and in his notes Mr. Elliott is concerned chiefly with the manuscripts; a special feature is his full list of references on every page to quotations of lines and passages from the play both in ancient authors and in old lexicographers such as Suidas and Hesychius. This is not the place in which to examine at length the principles of criticism at which Mr. Elliott has arrived as a result of his fresh collations of so many MSS., though it may be said that the chief of them consists in a slight depreciation of the prestige hitherto enjoyed by the Ravenna MS. Mr. W. G. Clark held that "the authority of the Ravenna MS., in a case of doubt, outweighs that of all the others put together." Such has been the general attitude of editors, but Mr. Elliott tells us that he has "found numerous cases where R's reading is certainly inferior to a consensus of the other MSS." Not the least valuable part of a most painstaking volume are the appendices on "Athenaeus's Text of Aristophanes," "The papyrus fragments of the Acharnians," and on "The Greek dialects in Aristophanes."

The Histories of Tacitus. Translated by G. G. Ramsay. lxxv+463 pp. (Murray.) 15s. net.—This is a most pleasing volume from every point of view; there is a long introduction which deals with the historical situation and contains a most interesting vindication of the Tacitean or literary style of writing history as opposed to the inhuman scientific school associated, rightly or wrongly, with the name of Prof. Seeley. Not that Tacitus is incorrect or untrustworthy as a historian—comparisons with Plutarch, Suetonius, and Dion Cassius establish his reputation in that respect beyond all question; but he treats history in the manner familiar to modern readers from the works of Lord Bryce and Mr. Trevelyan. In addition to this introduction there is a preface, in which Prof. Ramsay has attempted to outline the principles which he has followed in his translation. These remarks, read in conjunction with examples of the art of translating (given in a short appendix), cannot fail to be of great help to all students who have to do a great deal of translation work in the course of their studies. It is a difficult subject, and one cannot expect agreement as to the principles to be employed. But all would grant that the result should read, not like a translation, but like an original work in the language into which the translation has been made. No higher praise could be given than is implied when it is stated that in this volume Prof. Ramsay has certainly succeeded in this object; and, more than that, he has given us some indication of the methods by which he has succeeded in it. Nor is it a mere translation; every page has footnotes, which practically amount to a running commentary dealing with questions of Roman usage, Tacitean style, historical points, or strategical questions such as have been dealt with by Mr. Henderson in his "Civil War and Rebellion," whose theory of the first battle of Bedriacum, by the way, is subjected to a searching

criticism in Appendix II. of this volume. Altogether the book should be a delight both to the general reader and to the scholar. It is well produced, with frontispiece of the coins of the four emperors (these also decorate the binding, which should have been stouter), three good maps and a useful index.

English.

Cowley's Essays. Edited by A. E. Gough, 370 pp. (The Clarendon Press), 4s. 6d., is for the advanced student. It is one of the many volumes that, thanks to careful printing, takes us back to the day it appeared; and fount, italics, spelling, capitals almost delude us into the belief that we are opening a folio. Cowley, whose *Essays* are filled with verse, belongs to those who, like Browne, Lamb, Montaigne, take the reader into the author's confidence; and if the "Papers of Henry Rycroft" are sadder, still in both books *cor ad cor loquitur*. The notes are full and necessary; for the purpose of comparison it would be an interesting task for any editor to supply us with the names and whereabouts of half a dozen essays on Solitude, Gardens, Procrastination, Myself, and the like.

Poems and Prose for Comparative Study. Arranged by J. E. Feasey. 150 pp. (H. Marshall.) 1s. 6d.—So far as we know this is an experiment in editing. We are acquainted with teachers who have tried the method; but the book before us puts the matter very clearly and well. For instance, Psalm c. is taken in the Prayer Book, the A.V., the R.V., and Prof. Moulton's versions; and to these are added Sternhold and Watts. Then a series of questions is appended on the similarities and divergencies. Of course, many other vss. might have been used; and an admirable lesson on the translations of the Psalms would follow. Again, one prose extract and five poems are printed on "The Skylark"; and the class is asked for its observations. The method and the consequent training in taste and literary criticism are capable of indefinite expansion.

A special word of welcome is due to two little books on animals, *Insect Life*, 96 pp. (Macmillan), 6d., and *Curious Facts about Animals*, 80 pp. (Macmillan), 4d. The former is an abridgment of stories by that famous naturalist, J. H. Fabre, and our only complaint is that his life, which is as interesting as that of one of his beloved beetles, is not told at greater length. Children, even those who are brought up on Long and Seton-Thompson, will revel in the work of the "Insects' Homer." The other little book, which is quite juvenile, answers in engaging form such questions as "Why do cats spit?" and "Why do eggs vary in size, shape, and colour?" Both booklets strike a new note for those who cannot afford expensive books.

History.

The History Teacher's Magazine. January–April, 1915. (Philadelphia, U.S.A.: The McKinley Publishing Co.) 20 cents each copy.—Although these four numbers of our American contemporary contain, as usual, many articles of value on the teaching of history, on syllabuses of study, and the equipment of history class-rooms, their chief interest at the moment for English readers centres in the contributions which they make to the discussion of the origin and meaning of the European war. In the January issue Mr. Roland G. Usher, well known for his outspoken volume on Pan-Germanism, deals with "The War and the Future of Civilisation." He notes sarcastically that all the nations engaged insist on "the necessity

of their continued existence to ensure the future of civilisation"; but he comes to the conclusion that civilisation is not in so great peril as they seem to suppose. The February number presents a bibliography, not readily obtainable elsewhere in English, of "German Literature of the War." In March appears a typical German letter, signed by two hyphenated Americans, Drs. Friedrich and Rühlmann, on German innocence respecting the origin of the war. It makes curious reading, for it is evidently sincere. Its purport may be gathered from the concluding paragraph: "Not force but justice is the idol of the German nation, and to such a degree that her unextinguishable love of justice makes her continually judge political affairs from an ethical point of view, and renders her rather averse to acknowledge the hard necessities of political rivalry." In the April issue Prof. Clarence Perkins crushingly replies to the two German doctors. He points to "desolated Belgium" as the effective answer to the German profession of idolatry.

Elementary Principles of Economics, together with a Short Sketch of Economic History. By R. T. Ely and G. R. Wicker. Revised and adapted for English students by L. L. Price. xii+406 pp. (Macmillan.) 4s. 6d.—For more than thirty years Prof. R. T. Ely, of Wisconsin University, has been establishing his reputation as one of the soundest and sanest of American economists. It was therefore a matter of congratulation when, in collaboration with Dr. G. R. Wicker, of Dartmouth College, he published a textbook on "The Elementary Principles of Economics." The book was, of course, prepared for use in American schools; its economic history was largely concerned with developments in the United States, and its illustrative examples were drawn from the industry, trade, and finance of the Republic. Hence as it stood, with all its merits, it was unsuited for use in England. Mr. L. L. Price has subjected it to a revision which removes all objections. The economic history relates to England, and the examples are English. The peculiar merits of the book are the excellence of its arrangement, and the success with which the elements of a difficult subject are simplified. The book is attractively printed, and it is illustrated by a number of tables and diagrams.

The Main Stream of European History. By F. Harrison. viii+183 pp. (Blackie.) 1s. 6d.—The title of this book does not aptly indicate its contents. Mr. Harrison has not written a manual of general European history, but a war-book based on the assumption that "there are three great factors which together produced the conditions from which this conflict arose, viz., (1) the rise of the German Empire; (2) the Eastern Question; (3) the neutrality of Belgium." The development of these three factors from early times is traced in a series of chapters which provide a brief, though not very well arranged, summary of the most important data. It is convenient to have the chief relevant facts of the historic antecedents of the war brought together in this cheap and handy form. Six coloured maps help to elucidate the narrative.

Geography.

Dent's Historical and Economic Geographies: North American (Senior Course). By H. Piggott and R. J. Finch. xvi+288 pp. (Dent.) 3s.—The authors make an attempt to present a complete picture of North America not only as a modern area but also throughout its history; the aphorism—the roots of the present lie deep in the past—has apparently led them to a conception of geography which requires that section iii., "Native Life in North America," and section iv.,

"Discovery, Exploration, and Colonisation," should run to one-tenth and one-fifth of the book respectively. The result of the inevitable condensation is seen in the baldness of the statements of fact: for example, Wolfe is stated to have captured Quebec single-handed in a sixteen-line summary of the American part of the Seven Years' War; the changed character of the immigration into the United States during recent years is missed completely. The influence of seasonal rainfall upon crop-growing is omitted; the ancient heresy regarding Sea-island cotton appears in the form that cotton grows best on light soil near the sea; Galveston is stated to be on the Atlantic seaboard; the omission to note the varying size of the several States causes a fictitious prominence to be given to the Dakotas and Minnesota as producers of wheat—these are matters of importance in section v. The detailed studies of the separate political communities which occupy the last hundred pages become little more than a catalogue of facts. This book has so many good points that we wish the authors had extended it to at least three times its present size.

Cambridge County Geographies: Durham. By W. J. Weston. 184 pp. *Glamorganshire.* By J. H. Wade. 196 pp. (Cambridge University Press.) 1s. 6d. each.—Both these county geographies maintain the high excellence of the series. Is it an accident that these two volumes should appear about the same time? They almost tempt us to emphasise the similarities between the two counties; the prevalence of the Coal Measures and the consequent importance of the coal mining; the early working of iron and lead ore mined in the county and its abandonment in favour of ores of iron and other metals obtained cheaply from abroad; the relatively high density of the population, and the consequent fishing industry on the coast; the great ports which serve the traffic. Finally, it must be noted that most of these resemblances have come into being during the last 150 years, and that they are based upon a very different historical growth, among a very different breed of men.

Mathematics.

Staunton's Chess-player's Handbook. Revised and edited by E. H. Bermingham. xxiii+544 pp. (Bell.) 6s. net. *Chess Strategy.* By E. Lasker. xiii+282 pp. (Bell.) 5s. net.—The new edition of Staunton's "Handbook" contains all the chief variations and many of the games from the "Chess Praxis," and thus embodies in one volume the chief of Staunton's researches. There has also been included a large collection of games, about 250 in all, by nearly all the greatest players. Enriched and enlarged in this manner, the book will continue to hold the high position which it has maintained for nearly seventy years in the esteem of chess-players.

The first edition of Lasker's "Chess Strategy" was exhausted within a comparatively short time, and the work before us is a translation of the second edition, which was to all intents and purposes a new book. The distinguishing feature of Lasker's system of teaching is the manner in which at the outset he lays down certain principles by means of which the value of any move can be gauged. He then explains the application of these principles to the various phases of each of the forty-eight typical games which are recorded, his aim always being to appeal less to the memory than to the common sense and intelligence of his readers. This also is a book which every chess-player will be anxious to possess.

A Treatise on Statics. By G. M. Minchin. Vol. ii. Fifth edition. Revised by H. T. Gerrans. viii+360

pp. (Clarendon Press.) 10s. 6d.—Before his lamented illness and death the author contemplated making extensive alterations in the new edition of this well-known work. He was unhappily prevented from doing this, and Mr. Gerrans undertook the task of revision. He has omitted the chapters on "Astatics," "Elasticity," and "Electrostatics," as well as some of the articles in the chapters dealing with "The Principle of Virtual Work" and "The Equilibrium of Strings and Springs," and it is stated in the preface that it was intended that certain of these portions should form the basis of a separate work. On the other hand, an appendix has been added containing nearly five hundred examples set in university and Civil Service examination papers. Many of them, especially those dealing with attractions, are of considerable interest. In a few cases complete solutions are given, while in others hints will assist the student. The new is more handy than the older volume, and will be found better adapted to the requirements of students.

Arithmetic. By N. J. Chignell and W. E. Paterson. Part I. xiv+320 pp. Part II. xxvii+276 pp. (Clarendon Press.) 2s. 6d. each.—We think that this work will meet with a favourable reception from teachers in secondary schools. The authors have endeavoured with success to incorporate the best features of both the older and newer methods of treatment. The first part contains an account of the usual arithmetical processes, while the second deals with mensuration and commercial arithmetic. Very early attention is drawn to the expression of numbers as multiples of numbers between one and ten by a power of ten, and decimals and the metric system are dealt with in the second chapter. Generalised aspects of the operations serve as an introduction to the notation of algebra. A sufficient but not too great amount of attention is paid to contracted methods, and no time is wasted in elaborating rules for their performance. Some examples of graphs are provided, and a chapter teaches the use of logarithms. There is an abundant supply of examples.

Science and Technology.

Domestic Science. Part I. By C. W. Hale. xi+327 pp. (Cambridge University Press.) 3s. 6d. net.—It is difficult to understand why Mr. Hale has chosen the title "Domestic Science" for his book, which proves on examination to be an experimental course of physics and chemistry of the kind familiar to all who know the preliminary work in science done in the majority of secondary schools for both boys and girls. It is true that in addition to the subjects usually studied during the first year of laboratory work he has included a treatment of "the constitution of matter," "the kinetic theory," and "chemical classification," but this difference tends to make his scheme of instruction less rather than more one in "domestic science." All experienced teachers seem to be agreed that lessons in domestic science for girls must be based firmly upon an acquaintance with the basal facts of physical and chemical science, but there is an increasing unanimity as to the advisability of illustrating each new principle as it is studied by examples met with every day in the home and in the daily routine of the average mortal. Yet in his preface Mr. Hale says, "no attempt has been made to indicate every application of the book-work to domestic affairs." The volume presents a satisfactory course of general elementary science which has been developed by an experienced and successful teacher; but science-mistresses who are seeking guidance in what is still the pioneer work of drawing up a scheme of work in domestic science will derive little help from this volume.

An Introduction to the Study of Plants. By Prof. F. E. Fritsch and Dr. E. J. Salisbury. viii+397 pp. (Bell.) 4s. 6d. net.—It is safe to predict that this will become a very popular manual of elementary botany. Although the book includes only such details of internal structure as can be recognised with the help of a good hand-lens, the careful choice of examples has made it possible to give an unusually clear and helpful outline of the morphology, physiology, and ecology of plants as they are illustrated by common British species. The essentially novel features which the authors claim for the book are "the inclusion of a chapter on the soil in relation to the plant, and a somewhat detailed account of vegetation as a whole." These, however, are by no means the only respects in which it shows a welcome contrast to the familiar text-books. The authors are authorities on their subject, and their treatment throughout is crisp and fresh, and shows personal experience of the difficulties of beginners; while the eight plates from photographs and the 222 drawings are all new and really illustrate the text. Another good feature is the full and careful index. Within its scope—somewhat beyond matriculation requirements—we know no text-book of botany which can be recommended with greater confidence.

Plants and their Uses: An Introduction to Botany. By Frederick Leroy Sargent. xi+610 pp. (Constable.) 5s. net.—This volume is on rather unusual lines, and is not, we think, very likely to be adopted as a text-book in classes preparing for examinations in elementary botany. But it brings together a mass of well-arranged information and provides a collection of drawings of the greatest value not only to advanced students of botany, but to all persons interested in the economic side of plant life. The author pays relatively scant attention to mere weeds, but goes into all manner of interesting detail about food plants, flavouring and beverage plants, medicinal and poisonous plants, industrial plants, and so forth in the first half of the book. It is this part which makes the book specially worthy of a place in the school reference library. The later portions of the volume will appeal more exclusively to botanists, as they are concerned with the classification, life-histories, and evolution of plants. Special mention should be made of the 384 excellent wood-cuts.

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(Compiled from information provided by the Publishers.)

Modern Languages.

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The Use of Notebooks in Teaching Science.

THE two most important science subjects taught in boys' secondary schools are chemistry and physics, and the views expressed in this letter apply primarily to these subjects, but could be equally well applied to any other science subject, as, for example, nature study, in which practical work is done by the pupil.

The amount of time given to science work in, say, the middle forms varies in different schools from roughly three to six hours a week, and in accordance with the most approved views a very large proportion of this time is spent on experimental work performed by the boys themselves. The nature of this practical work, like the amount of time expended on it, varies enormously, but the problem of how to get the maximum educational value from this part of the work is always before us. In my opinion, one of the most important factors in the solution of this problem has to do with the proper use of notebooks.

It will be well first to consider briefly what are the principal aims served by experimental work which could not equally well be reached by a course of lecture and demonstration work on the part of the teacher. The object of practical work is certainly

not to train the pupils to become professional works' chemists, or analysts, or instrument-makers, or engineers; nor is it, primarily at any rate, to enable them to pass examinations in practical science, but it is surely mainly to give them a deeper insight into the realities of the bodies and facts studied and of the difficulties which have been overcome in the past and remain to be overcome in the progress of science—a more real knowledge, that is to say, than could be acquired in any other way; also to promote greater accuracy and thoroughness on the part of the pupil, and incidentally to give the pupil a keener interest in the work. To have prepared a good specimen of copper sulphate from the metal gives to the intelligent pupil knowledge, in the true sense of the word, which he could have obtained in no other way.

But in order to obtain the greatest benefit from this work, all will probably agree that it is necessary for some record to be kept. It is surely a good maxim that what is worth doing is worth recording, but, in any case, one needs not to search far for theoretical justification of this rule. Thus one might refer to the valuable powers of precision and exactitude bestowed. One cannot easily be ambiguous in a diagram or in a well-recorded observation, but probably a better justification is to be found in psychology. Regarding, with Prof. James, the mind as a biological instrument to aid man in adapting himself to this world's life, we shall also agree that the mind can receive no reception without a corresponding reaction, no satisfactory impression without correlative expression. How can this expression be better attained than by written accounts of impressions received by observation?

But how and when shall the records be made? Here we meet apparently with great divergence of opinion.

To refer to two only of the many excellent chemistry text-books on the market we find diametrically opposite views expressed. In Wilson and Hedley's "School Chemistry" the use is advocated of (i) a laboratory notebook for what may be called a first-hand record of observations, weighings, and measurements; and (ii) a fair notebook in which a full, well-written account of the work is to be made afterwards. In Lewis's "Inorganic Chemistry," on the other hand, it is expressly stated that "records of experiments should be made at the time, and so neatly that a fair copy is superfluous." What is the young science master straight from the university to make of this? Which course shall he adopt? Probably the one which has been the custom in the school to which he first goes. But is this good enough?

In my opinion, formed after several years' experience of each method, the choice seems to be between obtaining the maximum of real educational efficiency on one hand, and a greater superficial excellence combined with a less expenditure of labour on the part of the teacher on the other hand. To look a little more closely into the two systems—of what educational value is the "fair notebook," or embellishment of the laboratory notebook, on which the pupils often spend an immense amount of time and red ink and skill in drawing of diagrams and everything except thought about the work done? Surely most of the valuable time thus occupied might be much better employed in answering a few problems or questions or in consolidating the knowledge gained earlier in the course. Moreover, is not the fact that only one record is to be made an incentive to more accurate observation on the part of the student, who should feel that his record will be good or bad just in proportion as it is an accurate and honest account of the work in hand? It cannot here be too strongly advo-

cated that a good notebook *should* be an honest account of the work done, that is, it should include records not only of successful experiments but also of failures and partial failures. Thus a quantitative experiment which gave a not sufficiently accurate result should be recorded and the cause of inaccuracy or failure should be carefully noted at the time if known; in this way can progress be measured. But how many of the fair notebooks, in which many students take so much pride, contain any record of failures? To take another example: A student of analytical chemistry has spent an hour or so in finding the constituents of a "mixture," and made rough notes of his work by the way. He afterwards—often long afterwards—spends fifteen minutes in "writing up" the work. Which record will contain a truer account of his observations and difficulties?

The main argument, one would suppose, of the adherents of the two-notebook system would be that a second entry leads to a more permanent impression on the mind of the pupil; but surely this greater emphasis should not be needed if the actual practical work has been carried out thoughtfully by the pupil and once recorded.

The difficulties in the way of the one-notebook system are apparent enough. To take an example, there is the need for extreme cleanliness and neatness at the laboratory bench, especially in the chemical laboratory, if anything like a presentable notebook is to result. But then this neatness of working is one of the most desirable assets of the practical chemist, and trouble expended in its fostering is well spent. Certainly it must not be expected that the same perfection of style, of writing, or of drawing diagrams can be attained in the single notebook, but given sufficient care on the part of the teacher in examining the books, even these things will rapidly improve as the student progresses in other ways; and, moreover, the use of the single notebook need not exclude the later addition of further details of method, say, for the insertion of which there was not time in the laboratory.

In the same way, of course, one might go on, *ad infinitum*, multiplying the minor difficulties and advantages of one or the other method, but perhaps enough has been said to indicate the reality of the opposition between the two methods; surely both methods cannot be justified, and at the present time, when the question of the efficiency of our scientific education is so much to the fore, it is imperative on us to choose the right path even in the minutest detail.

G. N. PINGRIFF.

University College School.

National Education and the War.

IN his contribution to your symposium on the above subject, Prof. Adamson suggests that "a Briton is not the best equipped critic of British ways." The truth of this remark is not diminished by its obviousness; those that are amid the tree-trunks cannot see the forest. On the other hand, a foreigner often finds it difficult to get, on alien soil, that necessary starting-point of sympathetic familiarity without which all criticism is apt to go astray. It so happens that during the last ten years I have been for a long period transplanted from English secondary education to French secondary and higher teaching, and then back to corresponding fields at home. Fresh from a different atmosphere, I seem to notice one or two radical defects in what we call our educational system; perhaps a brief allusion to them would not be irrelevant to the discussion you have originated.

The French attitude towards learning—and I think one may say that it is also that of the Germans—is

one of respect. Knowledge is a thing worth having; youth is the time for laying the foundations of that information, without which a man cannot play his part in the highly organised and specialised society of to-day. Their schools being directed by the State for the preparation of intelligent, well-informed citizens, they do not hesitate to make it plain to any slack, weak-minded, or otherwise unworthy student that his room (at any rate, in a secondary school) is more valuable than his company.

In many—shall I say, most?—public and secondary schools here the acquirement of knowledge and the improvement of the mental faculties are not the dominating interests. We are "musculars," and not "intellectuals"; sport is considered as important as school-work; the pupil who works conscientiously is often regarded by his comrades as a "horrid swot," who is "sucking up" to his masters. If a boy can learn a little during his school years, well; but above all let him learn to be a gentleman, even if an ignorant one.

It is obvious that from these two attitudes towards the acquirement of knowledge, there must proceed decided differences as regards the manner in which schoolwork is done. In French schools (where, I admit, the best pupils work *too* hard) there is a strong spirit of emulation and a desire to be efficient. In English schools the greater number of the pupils are not keen; they drag along an ever-lengthening chain of ignorances due to dull hearing, lazy thinking, and careless reproduction; they become more and more inefficient, and leave the school having learned little but how to do things badly.

It is when one considers this—and who that has marked papers for public examinations will deny it?—that one is somewhat sceptical as to the claims often put in for our success in the formation of character. Certainly, English schoolboys are on the whole manly and truthful fellows—easier and more agreeable to deal with than French or German boys. But their character is formed outside the school, has been formed by centuries of religious and political discipline. I would rather advance that their school life does little or nothing to improve that native character and much to deteriorate it. For if a boy can lounge through a public school education, perfecting himself a little every day in the art of doing things badly and of avoiding soul-stiffening effort, how can his education be said to improve his character? The education that *does* form character is the one that makes a fellow understand that the work he has to do should be done to the utmost of his power, that stupidity due to laziness is a vice, and that in life duty is paramount.

Surely this war has taught, and is still teaching, us the necessity for efficiency and organisation, the need for judging clearly what should be done, of setting about it with promptness and order, of carrying it through with determination and to the farthest detail. Surely it is showing us the intense value of knowledge in the direction of our complicated modern society. When all our schools place the acquirement of knowledge and hard efficient work foremost, they will be fitting our citizens to meet any time of crisis—and though I do not object to drill, except as a school-hour subject, effort devoted to those two ends will be far more profitably expended than on forming fours, blowing the bugle or doing rolls on the side-drum.

FRANK A. HEDGCOCK.

What is "The History of England"?

OF all the subjects in the school curriculum none receives more frequent criticism, and none makes less real progress than history. We are continually being told that something is radically wrong with our pre-

sent methods of history teaching, but as yet the actual suggestions that have been put forward have not been either of conspicuous brilliancy or of wide acceptance. Treatises on the subject have appeared from time to time, yet it cannot be denied that they usually fail in one important particular—they do not go to the heart of the matter by eliciting a satisfactory answer to the question: Why is history taught at all?

This question has, of course, been raised, and observations have been made on the subject, some good, some bad. It is suggested that a knowledge of history is required for a proper appreciation of general literary reading, and again for the more practical understanding of the current events of the day. History has been extolled as an agency for broadening the human mind by bringing it into contact with men and manners of other ages, as geography does in introducing it to men and manners of other lands. It has been rather superficially praised as a sort of practical guide to modern politics, or, more broadly, as a store-house of enlightenment on human nature in general.

Yet all these suggestions on the value of the study of history seem to fall short of the most important aspect of the subject. History has appeared in many different guises at different times; now as a glorification of mighty deeds of valour, now as a biased champion of some party or faction, now as a painstaking collection of all the ascertainable facts of a past epoch. But, for practical purposes, history does fulfil one main object; it enables us to understand the great factors which have influenced and moulded the course of those masses of human beings which we call nations.

This is not by any means sufficiently realised either by writers or by teachers of English history. The great movements and influences powerfully controlling the destinies of the nation are more often than not tucked away and even concealed by the superabundance of irrelevant and pointless detail.

The blame for this must largely lie at the door of conservative tradition. The things we ourselves learnt about when we first studied history become invested with a halo of sanctity which almost compels us to preserve them in our modern curriculum. What history writer would pass over the adventures of Richard I., the battle of Spurs, Raleigh's Guiana voyage, the Fire of London, or the Wilkes incidents, without a twinge of conscience, and yet from the broad point of view all these topics, though they have their own distinct significance, could well be omitted from a first sketch of English history.

Examples without end could be given of the prevalent fault of overlaying the main threads of history by subsidiary matter which only tends to prevent even a mature student from appreciating the essential.

One very prevalent evil is the exaggeration of the biographical element in history. There seems an irresistible temptation to deal with such men as Becket, the Black Prince, Sir Thomas More, Marlborough, and Nelson from the personal rather than from the national point of view. History is certainly not "a collection of biographies," unless by this phrase we mean to include the whole of mankind, and though biography forms a very good handmaid to history in the junior forms of our schools, in the more serious study of the subject it must always be remembered that it is the story of the nation and not that of the individual that we are after. It is the biographical tradition that has perpetuated the oft-abused division of the history-book into reigns.

The common fault of overloading with details may be well illustrated by considering the methods usually employed in dealing with the Becket controversies,

Magna Carta, and Waterloo—to take three very prominent instances. Our text-books usually conceal the true significance of the Becker disputes as part of the great struggle between Church and State under a host of personal details about King Henry and the Archbishop, including the classic quotation about the "turbulent priest" and the gory details of the murder. The real place of Magna Carta as an incident in an age-long struggle between the Crown and the Baronage of England is obscured by a lengthy summary of its chief clauses (devoid of meaning to modern readers without copious explanation and annotation), and an account of the movements of rival armies before and after its signature. Waterloo was the last despairing peck of the dying Napoleonic eagle, but as presented in most of our histories of England, with their long descriptions of the situation of Hougoumont and La Haye, Papelotte and La Haye Sainte, and their detailed chronologies—2 p.m., 4 p.m., 6 p.m.—it wears the appearance of the most important and critical battle of our history.

It is highly important that the history book or teacher should be able not only to retain a grasp of the central threads of history, but to distinguish the really important events and facts from the lesser. The assistance rendered to Henry V. by the strife of parties in France is often forgotten in three-page rhapsodies over Agincourt; the vital question of Belgium and the Scheldt which led to the outbreak of the great war of 1793 is usually overshadowed by the indignation felt in England at the execution of Louis XVI.; and Calder's magnificent struggle with fifteen ships against twenty-five off Cape Finisterre in July, 1805, is thrust back into comparative obscurity by Nelson's last great sea-fight in the following October, though the former stands to the latter much as the defeat of the Armada stands to Lord Howard's victory at Cadiz in 1596.

Recent text-books have taken a step in the right direction by an attempt to abandon the old-fashioned chronological method of arrangement in which all varieties of topics, party struggles, ecclesiastical matters, foreign policy, social movements, financial affairs, Scottish and Irish questions, and military details are lovingly though perplexingly entwined. It is pleasing to see the home politics of the nineteenth century dealt with in a separate chapter to Imperial expansion during that century, and to find the events of the Hundred Years' War kept apart from the domestic history of the Lancastrian kings. This marks a beginning of reform, but a great deal more remains to be done.

We cannot hope to get sound history teaching in our schools until the writers of our text-books realise that what is wanted is a narrative of the progress of the nation, a narrative which is clear and connected, which keeps the main threads of history well in hand, which lays proper emphasis on the really important points, and maintains a proper proportion in the amount of space allotted to the various topics of discussion. When these principles are grasped and fully put into action there will be less occasion for the querulous tone in which the teaching of English history is at present discussed.

EUGÈNE L. HASLUCK.

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Catering for Dinners in Day Schools.

I HAVE read with great interest and sympathy the suggestive and stimulating article in your May issue by Mr. W. A. Newsome on catering for dinners in day schools. It is greatly to be desired that his appeal to others to relate their experiences should not fall on

deaf ears. In this connection it may be helpful for me to remind your readers that the problem of the midday meal in day schools was the subject of a valuable paper by Dr. Alfred A. Mumford (medical officer to the Manchester Grammar School) submitted to the Guildhall Conference on Diet and Hygiene in Public Secondary and Private Schools, 1912. In the report of the Conference contained in "Our Children's Health at Home and at School" will be found not only this paper in full, but also speeches made by Dr. Mumford and Dr. Catherine Chisholm (medical inspector of the Manchester High School for Girls) on the same occasion. Specimen menus of both institutions, as well as of many other public and private schools, are also given. Numerous useful hints on the diet of secondary-school children may be gleaned from the papers of Dr. Clement Dukes, Miss M. E. Robertson, Mr. W. H. Prosser, and Dr. Sim Wallace, as well as from the discussion opened by Dr. Robert Hutchison.

I shall be happy to send particulars of the volume, as well as of our publications, which include "Aids to Fitness"—issued by the Schools Committee—to anyone forwarding a stamped addressed envelope. The latter committee will also be glad to be of service to any head of school or house in his or her efforts to give effect to the main conclusions of the first Guildhall School Conference. These, so far as diet is concerned, were summarised in the *Lancet* of September 14th, 1912.

The difficulties of catering in war time, emphasised by your correspondent, have been aggravated by the fresh advance in meat prices. Recent applications received from secondary schools, colleges, and other institutions suggest the desirability of mentioning that our latest publication—"Facts for Patriots," first series—contains concise and authoritative information on the nutritive value and best methods of using some of the principal alternative food bases. The second series treats of subjects of scarcely less importance to schools, viz., bread, vegetables and fruit, sugar and sweets.

CHAS. E. HECHT,

Secretary, Schools Committee of the National Food Reform Association.

178 St. Stephen's House, Westminster, S.W.

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SIXPENCE.

THE TEACHING OF MODERN EUROPEAN HISTORY.

By Prof. F. J. C. HEARNshaw, M.A., LL.D.

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I.

THE Board of Education in a circular on the Teaching of History in Secondary Schools issued during 1908 (No. 599), made a notable advance in pedagogic policy by definitely advocating the admission of European history to the curriculum. "The course," it said, "must include in all cases such reference to and explanation of the chief events of European history as is necessary for the understanding of English history." This injunction, it is true, recognises the Continent merely as an appendage to the British Isles, and so proposes a method of teaching European history which is quite Ptolemaic in its eccentricity. But just as a geocentric astronomy is better than no astronomy at all, so an Anglo-centric European history is better than that insular disregard of everything that ever happened outside the British sphere of influence which has from time immemorial characterised the modern history teaching of our schools. The Board, of course, had to keep in view not only an educational ideal, but also the congested time-tables of the circularised secondary schools. By introducing an Anglo-centric European history it hoped that it might be "possible to remove the complete ignorance of any history outside England which is now too common, without adding a separate subject to the curriculum." This resembles the process by which ingenious people try sometimes to squeeze two persons through a turnstile, while paying for only one. The European history thus surreptitiously squeezed in was in the case of certain pupils, viz., those "chiefly occupied with the natural

sciences or mathematics," to be that of the nineteenth century.

The outbreak of the great War in August of last year suddenly made nineteenth-century European history of interest to many people besides youthful students of natural sciences and mathematics. The Board accordingly in September published a supplementary circular (No. 869) encouraging the general teaching in secondary schools of such European history as elucidates the antecedents of the war, and indicating in detail the best method of treatment.

The Board's proposals can roughly be summarised as follows. By way of prologue some account must be given of the French Revolution and of the wars that followed from it, since "without this the problems and events of the nineteenth century cannot be understood." Then must come a detailed study of the period 1815-1871, the half-century during which all the great states of Europe took their present shape or constitution. Beyond this date the Board thinks it undesirable that the course should be pursued. "The history of the continent of Europe from 1871 onwards," it says, "presents little that is suitable for school work, and it is doubtful how far it would be desirable to carry on the narrative in a systematic way beyond that year."

It mentions, however, a few special topics which may be pursued, as an epilogue, down to the present day. Such are (1) the growth of German population and prosperity; (2) the increasing influence of Colonial affairs, and (3) the change in the map of eastern Europe and the shores of the Mediterranean. Thus at length, as one of the minor results of the war, the study of European history on its own account and for its own sake, and not as a mere appendage to English history, has been recommended for introduction into the curriculum of secondary schools. This is a notable educational advance.

II.

The taking of the French Revolution as a starting point would be open to serious criticism, if it were intended that this time-limit should be adhered to rigidly; for it excludes many essential matters, *e.g.*, the career of Frederick the Great of Prussia, and the origins of the Eastern Question. But, of course, the choice of 1789 as the *terminus a quo* does not imply a proscription of all references to events of earlier dates, and as a matter of fact the interpretation of nineteenth-century history demands a knowledge of all preceding eras. With this proviso, the French Revolution makes a very good beginning, for it marked the first great outburst on the Continent of one of the two main forces which have determined all subsequent political movements, *viz.*, democracy.

The second of these main forces, *viz.*, nationality, was brought into vigorous operation during the Revolutionary and Napoleonic wars. The peoples of Europe refused to be liberated by force, and became amalgamated in desperate resolution to throw off the domination of Napoleon. At the Congress of Vienna (1814-15) neither democracy nor nationality received recognition; peoples were once more subjected to autocracies, nations were placed again under alien yokes. The Vienna settlement was thus doomed to be a fruitful source of future conflicts. Yet it is difficult to blame the diplomatists of 1815 for the arrangements that they made. They had, as a matter of fact, very little choice. Most of the big questions had already been determined by the treaties—*e.g.*, those of Abo, Kalisch, Reichenbach, Teplitz, and Reid—by means of which the fourth coalition against Napoleon had been built up. It was impossible to repudiate the solemn engagements by which, as the price of aid against Napoleon, Norway had been promised to Sweden, Belgium to Holland, Lombardy and Venetia to Austria; or those which had already repartitioned Germany, Italy, and Poland. Nevertheless, these Vienna arrangements were so directly opposed to the popular tendencies of the time that the political history of the succeeding century (1815-1915) largely consists of the record of the process by which they have been undone. France repudiated and expelled its restored "legitimist" line of kings in 1830, Spain in 1868, Portugal in 1910. Belgium revolted from Holland in 1830, Norway from Sweden in 1905. Germany and Italy joined to throw off the yoke of Austria in 1866, and both proceeded to complete their national unification in 1871.

It is possible to divide the history of these crowded and critical years into half-a-dozen

clearly-marked periods. The first (1815-1822) is the Era of the Congresses, during which that coalition of Powers which had overthrown Napoleon held together and met from time to time to discuss matters of common interest. Britain was the first to break away from the concert, owing to her unwillingness to combine with the other Powers to suppress national risings in Italy, democratic movements in Spain, and efforts after emancipation and independence in the Latin colonies of the New World. Russia was the second to drift apart, owing to her refusal to join Austria and Prussia in permitting the Turks to exterminate the revolted Greeks.

The break-up of the Concert of Europe inaugurated the second period, *viz.*, the Era of National Revolts (1822-1830). From one end of Europe to the other, from Ireland to the Balkan peninsula, nationalist movements disturbed the serenity of the established governments. Two of these, after much conflict, attained a triumphant conclusion: the Greeks secured deliverance from the Turks; the Belgians gained separation from the Dutch. The rest either remained incipient, or (as in the case of Poland and Italy) were suppressed.

In the third period (1830-1848) democracy, rather than nationality, was the dominant note. This was the era of the Chartist agitation in England, of the bourgeois monarchy in France, of Mazzini's republican propaganda in Italy, of the efflorescence of doctrinaire liberalism in Germany. It culminated in the gigantic and general upheaval of 1848.

This upheaval prepared the way for the era of European reconstruction that followed (1848-1871). Germany got rid of Austria, abolished her cumbrous confederal constitution, absorbed Schleswig-Holstein and Alsace-Lorraine, and finally set up as an empire. Italy was freed from Austrian dominance in the north, Papal misgovernment in the centre, Bourbon tyranny in the south, and was united under the House of Savoy. Austria, ejected from both Germany and Italy, entered into her existing partnership with Hungary. Britain, by means of the second Reform Act, became definitely a democracy. France reverted to a republican form of government, as a result of the catastrophe of the Franco-Prussian war.

The thirty years following this brief but vitally important conflict (1871-1901) form the fifth period of the century. Their outstanding characteristic was the rush for colonies, the struggle for new markets, and the race for industrial ascendancy on the part of European nations. It was an era of remarkable increase of wealth, of notable advance in discovery and invention, and of prodigious intellectual activity. Foremost in every enterprise,

colonial, commercial, industrial, or intellectual, was the newly unified and victorious Germany. Enriched by the French milliards, intoxicated with a consciousness of novel prosperity and power, Germany assumed, with something of the uneasiness and arrogance of the parvenu, the rôle of the first of European Powers. Nevertheless, in spite of many excursions and alarms, peace among the great Powers was maintained unbroken throughout the period.

The death of Queen Victoria during the first month of the twentieth century inaugurated the era which has culminated in the present war. It has been dominated by German aggression; by the German challenge to British naval supremacy; by German interference with French expansion in Morocco; by German hostility to Russia in the Balkans; by German designs upon Syria and Persia; by the operations of the German mailed fist in the Far East; by German menaces to Denmark, Holland, and Belgium; by German intrigue in Egypt, India, and South Africa. Earnestly have the nations, headed by Russia, France, and Britain, striven to keep the peace and to secure reductions in armaments. It has been in vain. The crash has come, and never can the world know any real peace again until German pride has been humbled and German power broken.

III.

Such is a very rapid survey of this momentous century. Those who wish to study it in detail will have no difficulty in finding textbooks. These are, in fact, so numerous that only a few of the cheaper and more easily accessible can be mentioned here. The introductory years (1792-1815) are excellently treated in Holland Rose's "Revolutionary and Napoleonic Era" (Cambridge University Press, 3s. 6d. net). For the whole period 1792-1878 it is impossible to desire a more brilliantly written and fascinating introduction than C. A. Fyffe's "Modern Europe" (Cassell, 10s. 6d. net). The best detailed textbook for the section 1815-1871 is W. A. Phillips' "Modern Europe" (Rivingtons, 6s. net). It is not, however, of much value for anything after 1871. The thirty years 1870-1900 are treated with masterly ability in Holland Rose's "Development of the European Nations" (Constable, 7s. 6d. net). This late period is also the strong feature of C. D. Hazen's "Europe since 1815" (Bell, 10s. 6d.). There is in this book, moreover, a bibliography of extraordinary fulness. Other brief sketches recently published are: L. C. Jane, "From Metternich to Bismarck" (Oxford University Press, 4s. 6d.); C. E. M. Hawkesworth, "The

Last Century in Europe" (Arnold, 5s. net); and E. Levett, "Europe since Napoleon" (Blackie, 3s. 6d.). The "Cambridge Modern History" covers the period 1815-1910 in its concluding three volumes (x., xi., xii.). The necessary maps for the understanding of the geographical changes of the century will be found in Ramsay Muir's "New School Atlas of Modern History" (Philip, 3s. net).

GEOGRAPHY ALBUMS.

By GUNDRED H. SAVORY, B.A.

The Mary Datchelor School, Camberwell Grove, S.E.

ONE of the well-known finger-posts to which teachers look for guidance along their many difficult paths is that which bears the legend: "Let the Child follow the Race." It is a worthy saying, and one which is not over-hard of application in all those school subjects taught in a laboratory, for there, out of Nature's own raw-material, the child can build up by way of experiment and inference a system of knowledge along the lines which his race, when reasoning successfully, has followed. In what, however, we perhaps think of as "book" subjects, the same process is less easy to initiate. In history, geography, and even literature, it is difficult to let the child think as man has thought; far easier to put into his hands the printed book, and let him read what man has done.

The "album" method of teaching Geography is the result of an effort to make the study of that most comprehensive subject a *constructive* one: its aim is to give the child, where possible, the enthusiasm and joy in achievement which belong to the explorer; to let him "discover" the country for himself, and "publish" the results of his discovery in a book of his own compilation. It gives also an opportunity for individual self-expression, as well as for that wonderful amount of effort which children are so ready to make when the occasion for doing so is a voluntary one; and, moreover, has for its result something which is a personal possession, more or less permanent in character, and is viewed with all the pride of authorship by its composer.

As followed at the Mary Datchelor School, then, the method works out in detail according to the following scheme. It varies to some extent from year to year, and is capable of different treatment in the different Forms, but the purpose is throughout the same, and is recognised as such by the girls, who in the course of their school career acquire a collection of these albums, to which they are often known to refer with appreciation in later years. Many who on leaving school will

give away their text-books as something "done with," will keep with jealous care these books which are the outcome of long and patient effort.

As a rule instead of a text-book, but occasionally in addition to one, each girl is given a fairly large drawing-book, either blank-leaved throughout or bound with blank and lined pages alternately. At the end of the year these books, while alike in certain fundamental particulars, will represent as many distinct records of information about the continent or region studied as there are pupils in the class.

That they must be alike in fundamentals is of course obvious, for all are setting out to "discover" the same country, and to a certain extent all must turn to the same source for information, the atlas. In its initial stages especially, the process is one of finding out what the atlas tells, taking its types of fact one by one, and as far as possible in the order in which they would be dealt with by an actual explorer in a description of his travels. This order is, within limits, chosen by the girls themselves. They are encouraged to ask for what they want to know next, and are helped to suggest the logical sequence of different types of phenomena; the idea being throughout that they are to lead in the discovery,—“allowing” the teacher to work with them and inform them where she can, but informing her as often as not. As a matter of fact, they are usually sufficiently logically-minded as a body to appeal for information in a perfectly satisfactory order. If they want to know about the people of the region before its climate, it is after all quite natural that the explorer should take this point of view; they will soon feel that problems of food, clothing and housing, can only be successfully accounted for by reference to climatic conditions. If they prefer a detailed description of a great city to a broad outline of a river basin, it is equally simple to pass from one to the other in this order.

Quite ordinarily, however, the map will be interrogated so as to follow such a line of inquiry as this:—(a) Position on the globe, and in relation to the home country and neighbouring countries. This involves simple references to probable climate, change of seasons, length of hours of daylight, variation in time, and methods by which the region may be reached. (b) Relief, again connected with climate and routes of travel. (c) River drainage, connected with the relative importance this will give to the respective coasts. (d) Temperature and rainfall. (e) Distribution of vegetation, population, and railway and other routes. A more advanced class

may also inquire into geological formation, distribution of pressure, etc.

In order to simplify the analysis into these as distinct conditions, the teacher puts at the disposal of each girl in the class a series of cyclostyled outline maps of the region, one map at a time. Each represents it from one point of view, but is so prepared as to require completion and interpretation by the girls. For example: a first map may have merely the coastline shown, and a few unnumbered lines of latitude and longitude; these will be identified, and observations recorded on the map as to what they imply with reference to seasons, time, etc. The second map may have three contour lines cyclostyled, and will be coloured by the girls: the temperature, rainfall, vegetation, and population maps will be divided up by dotted lines, and are eventually coloured to bring out the details; but only after the girls have suggested and found out for themselves what are the differences represented.

While in this map- and colouring-work the girls have an undoubted opportunity of showing artistic power, and do make marked progress in neatness and daintiness, the work is not such that girls who cannot draw feel hopeless, or that the girls who are artistic are able entirely to separate what they are doing from its geographical point of view. For instance: the making of the key to the colouring is emphasised as of primary importance, and effectiveness in making clear what each map expresses is placed above fanciful effects in painting or lettering.

When complete, each map is fully discussed in class, and what it shows is described by the girls in a written account. Finally it is neatly mounted in the album, and accompanied by either the girl's own account (sometimes re-copied after correction), or by an account typed and copied on the Rotary cyclostyle from a version composed by the class as a whole in one of the lessons, or from one written by an individual girl whose account has been considered good enough for everyone to use.

In addition to these maps and descriptions, which are the uniform part of the album, the book contains—and *this* is its leading feature—an abundance of illustrative material. The girls are shown how to make effective charts and diagrams on squared paper, thus representing to the eye in as striking a way as possible the lessons to be drawn from facts given in statistical form. They make temperature curves for the variations in average monthly temperature of a single place; temperature graphs contrasting a number of places; and rainfall charts in which not only are places compared, but the colouring shows

the seasonal variation in rainfall for each place. Diagrams of the same character are made from statistics as to population, products, imports, exports, etc., such as are given in the "Statesman's Year-Book" and kindred publications. Observations are written up and inferences drawn from these in such a way as to afford valuable training in logical methods of analysis and generalisation.

Finally, and in a way most important, among the illustrations are pictures collected by the girls themselves, mounted and grouped, and in many cases commented on by them in the books. These are perhaps of greatest interest to the girls; they make the geography *real* in a way that somehow nothing else does, and bring home the fact that geography is not a matter of text-books only, but of everyday life—the life of letters from our friends, magazine stories and articles, missionary endeavour, and of almost universal advertisement.

It is really extraordinary how easy it is to obtain at very little cost pictures eminently suitable for geography illustrations. The girls are not urged to spend money on their books, quite the contrary; they are encouraged to find what they can from the simplest of resources—old picture-postcards, foreign stamps, newspaper cuttings, and magazine pictures. Many add drawings or sketches copied from books which they find for themselves.

The teacher, however (and it is preferably done by her), can obtain for them even more useful material in another way. This is by going and explaining exactly what would be useful to her, and in what way it would be used, to the Publicity Department of various agencies and companies. Emigration offices, such as the Canadian office in Whitehall; or the agencies of the various parts of the Empire, especially Australia, Rhodesia, and the Union of South Africa; tourist agencies, railway and steamship companies, are all almost invariably willing to provide copies of their illustrated publications. Some have material especially intended for schools, and others will give out-of-date advertisement material. For illustration of the native life in certain countries not advertised in this way, missionary publications are often found exceedingly helpful.

It has been found more satisfactory for the teacher to keep most of this appeal for free material in her own hands. Not only is she more likely to receive it than her pupils, but she can emphasise its value to better advantage, and can distribute it fairly, at suitable times, and, if she chooses, as a reward of endeavour. However, the girls *do* become keen on this kind of collecting on their own account; and as this often involves the co-

operation of those at home, and thus a widening of the interest, it is not wholly to be discouraged.

Further, it has often been found possible to co-ordinate with the work done in the art classes in the school. The teacher can obtain specimens of the vegetation of the region studied; the Chelsea Physic Garden is most helpful in providing this in the case of foreign plants, such as Australian wattle, or African heath; while of value to London children are even such common English plants as heath, tamarisk, hops, the cereals, flax, etc. Colour-work studies of these are painted in the art lesson, and eventually find their way into the albums, while their adaptation to definite climatic conditions can be discussed as a geographical subject.

The work of album-building may be easily connected with other school subjects, especially in the higher classes. Once or twice in the term the girls may be encouraged to contribute essays on subjects chosen by themselves and connected with the region under consideration. One may deal with a particular book of travel which she has read, another may refer to literary associations, or again one may choose to give an historical sketch, or a biography of some famous explorer. These papers may be read aloud by the girls to one another at one of the lessons, and the discussion which follows will deepen in each the feeling of independent work, and will make the class as a whole realise how much there is to find out about the countries and the peoples of the world. Many of the girls are of an age to have their own reader's tickets at the public libraries, and take a pride in bringing to show to the others, books referring to their particular piece of work. They have thus a first insight into some of the pleasures of student-ship, and of the pursuit of knowledge for its own sake.

At the close of the school year the compilation is completed, and the books are prepared for exhibition. An index is made out and, perhaps, a preface written, both useful exercises in themselves. Then the girls look through each other's books to decide whether any of the illustrations require more explanation. Finally, where time can be spared for the purpose, they design an ornamental cover on good drawing-paper, take off the stiff cover which has protected their book through the year, and replace it by the new one, and fasten the whole with ribbons—matters un-geographical in themselves, perhaps, but serving to make the volume something even less resembling a school book than it did before. The book is certainly a treasure, now and henceforward.

Undoubtedly such work as this is best suited to the middle forms of the school. The girls must not be so small that the practical difficulties of colouring and mounting are too great for them, nor so advanced in their work that the pressure of outside examinations leaves them no time to spare for digressions from a set course. It is where the consciousness of dawning power gives its own peculiar delight to constructive work, that the method seems most valuable and the results obtained are most satisfactory.

It has also been found that the girls enter so fully into the spirit of the work that they voluntarily make albums of their own, treating according to the same method the district in which they have spent their holidays. They make maps which are really first-hand, illustrate with sketches and pictures, and give an interesting account of historical and other associations.

In the case of some who have now begun to carry on the work of education of others, it has been gratifying to hear them express their appreciation both of the method and its results, and to feel that they are teaching as they have been taught, with a real sense of its helpfulness. It does really seem as though in the hearts of these and many others, there have been awakened a power of true insight into geographical principles, and a keen desire to get at the reality of geographical data—an attitude of mind which, whether they be teacher or student, will stand them in good stead in whatever fields of more advanced knowledge they are carrying forward their endeavour.

THE SUPPLY OF ELEMENTARY-SCHOOL TEACHERS.

TO the central and local authorities for education, to training-college authorities, and probably also to the National Union of Teachers—for the defence of professional interests can be carried too far—the shortage in the supply of elementary-school teachers was a matter of grave concern long before the war broke out. The war has, of course, made the immediate prospect worse than ever, but fortunately it does not prevent the authorities from taking the steps necessary for safeguarding the future, because the selection of candidates for the profession is made at a much earlier age than that at which enlistment is possible.

The Board of Education has just issued, for the information of local authorities, a circular and a pamphlet which set forth the essential facts of the case. The facts are disquieting

enough, in all conscience. We need not quote the details extensively, because the documents are readily accessible. It appears that in most areas the needs of the profession require that the number of intending teachers recognised for the first time in any year should be at least 6 per cent. of the number of teaching posts in that area; otherwise the natural wastage cannot be repaired. For the whole of England, however, the percentage in 1913-14 was only 3·6; for England and Wales, 3·8. More striking still are the great differences in this respect between educational areas. In Herts the percentage is 5·4, and in Middlesex 1·2; in Oxford 11·5, and in Worcester 1·3; in Brighton 7·5, and in Eastbourne 2·7; in Sheffield 4·6, and in Leeds 1·8. Small wonder, then, that the Board finds it impossible to resist the conclusion that a number of authorities have hitherto taken little or no part in the important work of assisting intending teachers, and that many of them are relying upon the rest of the country to supply them with teachers.

We think it desirable to take a glance backwards, in order that we may judge whether a partial retracing of our steps is likely to extricate us from the mess into which we have got. The pupil-teacher system was established in 1846 by Sir James Kay-Shuttleworth, the first secretary of the old Education Department—an able and prescient administrator, if ever there was one. Anyone who doubts the truth of Matthew Arnold's saying that the pupil-teacher was the sinews of the English primary-school system must be either ignorant of the facts or destitute of the historical sense. It is sufficient to say here that the pupil-teacher made a primary-school system possible. The Revised Code of 1862 injured the pupil-teacher system, as it injured all else upon which it laid its blighting hand. But the system recovered, and for thirty or forty years it went on producing a race of teachers, generally skilled, but, it must be confessed, often untutored and uncultured. The greater school-boards, let it be said to their honour, realised the defect, and, notwithstanding long-continued opposition from headquarters, sought a remedy in the provision of central classes and of greater opportunities for study. The best of the pupil-teacher "centres"—institutions which flourished for about thirty years—undoubtedly did very good work. The inherent fault of the "centres" was their narrowness of outlook. Nevertheless, the important Pupil-Teacher Committee of 1896-98 reported that it would be a mistake to try to get rid of the pupil-teacher system. The system needed further improvement, and it needed to be supple-

mented by other sources of supply, *e.g.*, the secondary schools, but its abolition was held to be undesirable in principle and fraught with danger in practice.

This report brings us within four years of the Act of 1902. The Act itself imposed no express obligation on the local authorities to recruit teachers or to provide facilities for carrying candidates through the preliminary stages of their training. This policy seems to have proved a great mistake, for many of the authorities have practically recognised no obligation in this respect, but have relied upon other parts of the country for a supply of teachers. Furthermore, the administrators responsible for guiding the authorities under the Act appear to have been the proverbial young men in a hurry. They were in so much hurry to improve the race of teachers by insisting upon a better early education that they succeeded in bringing down the total number of entrants from 11,000 in 1906-07 to 4,500 in 1913-14. A report of the Board issued in 1907 threw cold water on "the ancient resource of pupil-teachership," and advocated "the better way" of deferring all practical experience in teaching until the training-college is reached.

Thus has been illustrated again the truth that in this country we do not take kindly to revolutions, but rather to a slow broadening down from precedent to precedent. The attempted revolution in the mode of recruiting the teaching profession has proved a disastrous mistake. The rural districts used to be a never-failing source of supply, but now, owing to the secondary schools being so difficult of access to boys and girls who would gladly have become teachers, that source of supply has been nearly dried up. And in the urban districts the boy or girl who has attended a secondary school until sixteen years of age has, especially if he or she happened to possess a good share of brains, been quick to perceive other and better openings in life than elementary-school teaching. This cannot be avoided, but it is a fact to be reckoned with.

What now remains to be done? The Board of Education has come to its senses, and it remains for the local authorities to put in force, quickly and effectively, the remedies suggested by the Board. The agricultural counties should follow the example of Norfolk, where, owing to the development of a rural pupil-teacher system, the number of entrants has risen from 55 in 1913-14 to 130 in 1914-15. And the urban districts which are autonomous for elementary education should co-operate with the authorities for higher education by offering an ample supply of posts as pupil-teachers or student-teachers in their schools;

for the deficiency in these "Part III. urban areas" is one of the most serious elements in the situation. If, notwithstanding the difficulties of the time, every local education authority in the country would take a strong line upon this question of the supply of teachers, the situation might yet be saved. T. R.

THE JUNIOR SECONDARY SCHOOL.¹

By E. M. LEAHY, M.A.

Headmistress of the Croydon High School for Girls.

IT may seem at first sight that a resolution from the Association of Headmistresses affirming the importance of education in early years is an unnecessary statement of the obvious. Yet at the present time there appears to be need for a clear statement of the faith that is in us, in the words of the resolution that we are "convinced that the sound education of children under ten years of age is of vital importance to their further progress."

In the matter of physical development it is generally agreed that care in early years will lay a foundation for future health, while neglect in infancy and early childhood may mean lifelong lack of vigour and even suffering.

In moral and spiritual development the thought of all ages bears witness to the sense of the importance of impressions in early years. "Train up a child in the way he should go, and when he is old he will not depart from it"; "As the twig is bent the tree is inclined"; "The child is father of the man."

But in intellectual development, and for the purpose of future progress in school work, there is a lack of general realisation of the importance of early years. Children are often left to drift, parents even in some cases thinking that the acquisition of knowledge may be harmful to their physical health, and there is no thought of the vital necessity of securing good habits. Yet there is health of mind as well as health of body, and the child who has not been trained to use mental powers before the age of ten is too often handicapped in after years by apathy and mental paralysis.

Let me say clearly that I am not pleading for more *knowledge* than is usually in the possession of an average child of ten. I do not feel alarmed at the idea that before that age, time may be wasted by hastening slowly.

¹ A paper read at the June conference of the Association of Headmistresses in proposing the resolution: "That this conference, being convinced that the sound education of children under ten years of age is of vital importance to their further progress, regrets that many children attending neither public elementary nor secondary schools receive no efficient education in early years; and recommends that preparatory departments be attached to secondary schools wherever this is possible, and that pupils in such preparatory departments be eligible for grants from the Board of Education." The resolution was adopted by the Conference.

With all respect to the marvellous standard which may be reached in the future by the child who has learned to write a year earlier than usual through the aid of the Montessori or other sense-training system, or the child of the future who will scamper through the school curriculum unhampered by the trials of spelling, I am simply pleading for good training of the ordinary normal child of the present. Good methods in the teacher should produce a keen, eager desire for knowledge, power of observation, love of independent work, joy in doing it and in making discoveries, combined with good habits of neatness and order. How often do we find these powers in the children who enter the middle forms of our schools?

Do not children often enter our schools between the ages of ten and twelve without power of observation and of independent work, and without any notion of neatness and method? The reason is that their intelligence has not been awakened, because they have been taught by people without sympathy and understanding. The younger children who attend elementary schools nowadays are more favoured than were those of a past generation, and each year adds to the ranks of teachers who have spared no pains to study the needs of young children. In many infant schools and lower standards of elementary schools excellent training is given, and children who have passed from it into secondary schools have shown the results by their after progress. There are other children who are fortunate in their home environment. They have good nurses, mothers with leisure, and governesses with such qualifications as are given by the National Froebel Union Higher Certificate or the training of the Ambleside House of Education. All this gives them excellent preparation for the school life of later years. Other children attend excellent preparatory schools with adequate staff and good equipment, but these schools are necessarily expensive.

But many of the children who ultimately attend public secondary schools do not come from homes providing special teaching, or from the elementary schools, or from excellent private preparatory schools. How then are they taught? Too often by an inexperienced and untrained young teacher without qualifications for her work. There are schools which profess to provide a Kindergarten or a Junior Department, but have neither the requisite staff nor the equipment. There are young girls who have not received sufficient education to be accepted as teachers in any public school, elementary or secondary, who are placed on the teaching staff of certain schools "to help with the little ones," or, in

other words, to attempt the most vital and most difficult task of laying an educational foundation. There are households in which an inexperienced young girl fresh from school has a morning engagement to teach children who require the most skilful direction if justice is to be done to their intelligence and future development.

The results of such a poor educational start for the children are often seen throughout school life. In such cases there is evidently a lack of "grounding"—that most expressive term—with the result that there are no clear ideas. Many a child is handicapped in some subjects, notably in arithmetic, through lack of good teaching in early years. This lack of advantageous environment also is evident in the absence of habits of independent work, absence of real interest in work, and a general lack of discipline which is alike a hindrance to mental and moral progress. No national scheme of education can afford to neglect this problem. Yet so far there has been apparent indifference to it. The special training of teachers for younger children in secondary schools has been little encouraged, and no grants are given for preparatory departments, though these are costly. They must necessarily be costly in maintenance because an ideal preparatory department must have plenty of space, small classes, and an adequate supply of well-trained teachers. Great things are expected from the child of to-day in our secondary schools. The general standard of school work is much higher now than it was in the past, and there is constant talk of raising the level in the future and of not wasting time. If more rapid development is to be expected, then there must be more attention given to the soil for the growing plant and intensive culture must begin early.

There is much more that might be written on the ideals of training for younger children, and for the specially qualified teachers who should have charge of them during the most impressionable years of their life. But I must pass on to a brief consideration of the economic conditions which affect the position of preparatory departments attached to secondary schools. As I have said, they *must* be expensive if they are really efficient. Yet no State aid is at present given in the form of grants. This places the preparatory department in the position of a costly luxury in schools without endowments, with low fees, which depend chiefly on State aid for their maintenance. The result is that some secondary schools transferred to local education authorities have been arbitrarily bereft of their junior departments, and other new schools started under the same government are

not allowed to receive pupils under ten years of age. So the children must wait until this age before they receive efficient education, for their parents cannot afford to pay the fees of good private preparatory schools, nor can they pay the salary of an efficient governess.

It will be said that these children could attend the elementary schools until they were ten years old. In some cases, perhaps, they could, and one wishes they would, rather than be left to drift as they do at present into an unsatisfactory educational environment. But the fact remains that they do not attend elementary schools, and it is doubtful whether they could be admitted in a mass unless a very great addition were made throughout the country to the number of places available in the junior classes of public elementary schools. From the point of view of national economy it would seem desirable in most cases to allow their parents to pay the moderate fees charged in the preparatory departments of the secondary schools.

In the resolution, the words "wherever this is possible" are intended to cover the special cases where it is obvious that a preparatory department is unnecessary, or even undesirable—for instance, the cases of certain public boarding schools. There may also be local circumstances or the terms of an endowment scheme which render it impossible to establish preparatory departments in connection with certain schools. But these are merely the exceptions, and I earnestly hope that this Conference will testify to its sense of the importance of education in early years, and will emphasise the necessity of adequate provision for the children who will attend secondary schools after they reach the age of ten.

"FREE PLACES" IN SECONDARY SCHOOLS.¹

By L. A. Lowé, M.A.

Headmistress of the Leeds Girls' High School.

WE feel that a certain portion of the community is not receiving fair treatment in the facilities given to them for secondary education, and that an extraordinary diversity of treatment exists among Local Education Authorities.

Investigations have proved that while some of the Local Education Authorities admit as candidates for their scholarships to secondary schools all children of parents whose income falls below a certain limit, others, possibly in the same district and as closely situated to the other as a county borough may be to a city

borough, only accept as candidates children who have attended elementary schools, while a few, though happily very few, actually penalise the parents of non-elementary children by fixing for them a lower income limit than for the parents of elementary-school children. However, though there is this diversity of treatment among the Local Education Authorities, with the result that children of parents living almost in adjoining roads may be subject to different conditions with regard to eligibility for scholarships, still, it may be agreed that a large number of these authorities are anxious to work towards the equal and just treatment of all needy children, irrespective of the place of previous education. *But* the Government (and this is where the anomaly comes in) does not act in accordance with this principle, and consequently many Local Education Authorities and Governing Bodies of Schools which are not richly endowed cannot afford to offer the scholarships they would wish to offer to needy children who have not previously attended an elementary school.

As we know, Local Education Authorities and Governing Bodies must depend to a great extent for their scholarship money on the Government grant, and this grant is at present *only* given when a school offers a required proportion of free places to pupils who enter the school from *public elementary schools*. This is the main condition, but reading carefully through the last issue of the "Regulations for Secondary Schools," one is struck by the extraordinary number of hampering restrictions in addition to that mentioned with regard to the provision of free places. For example, no private scholarship, *i.e.*, no scholarship offered by any body except a Local Education Authority or the Governing Body, not even one given by a co-operative society, even if it fulfils every other condition of tenure, can count, nor can free tuition offered to a boarder be reckoned in the required proportion; and further, the Board of Education does not countenance from the point of view of its grant, the division of scholarships in suitable cases into half-scholarships, by which not only would the parent have the healthy satisfaction of paying what he could afford, but also an increased number of children could be benefited out of what are unavoidably limited funds.

It therefore follows that a particular group of children is being inevitably neglected, owing to the fact that the Board will *not* help, and consequently many Local Education Authorities and Governing Bodies cannot afford the scholarships required.

It is no use to urge that *all* children who

¹ A paper read at the June conference of the Association of Headmistresses proposing the resolution which appears at the end.

need financial help in secondary schools should first pass automatically through the elementary school. For various reasons this is impossible. On the one hand, parents who can provide suitable education at home for the earlier stages, refuse to be *forced* to send their children to one type of school; on the other hand, the financial difficulties may only have occurred (possibly through the death, illness, or business failure of the father) after the child has been for some years in the junior forms of a secondary school, and in the case of such children education may be suddenly and completely broken off unless scholarships can be gained.

It is very easy to understand how, when these regulations were being made, it was advisable for the Board to concentrate its efforts on the transference of the elementary-school child to the secondary school, as this was a large and revolutionary undertaking, and of course the children of whom I am speaking are, and always will be, in the minority, but I feel that the time has now come for the Board to extend its benefits and to take in all needy classes of the community, otherwise the Government scheme fails to offer equal educational opportunities for *all*, and has no claim to be considered national.

It may be urged that the present is an inopportune and unsuitable time to press this new claim on the Government, but I urge that it is an exceptionally suitable and opportune moment at which to urge the claims of the poor non-elementary-school children, for it is quite clear that as a whole it is not the artisan who is suffering most severely through the war from a financial point of view, but what may be called for convenience sake (though I do not like class distinctions in nomenclature) the poorer middle-class—some professional men, small business men, and, above all, the widows of men of this class who have fallen in the war. The children of many of the above parents will have begun their career at a secondary school; some, on the other hand, will be only just ready to leave the hands of governesses or will be just finishing their training in preparatory schools. The educational needs of these children must be provided for. Scholarships must be offered, but they *cannot* be offered, unless the Board will give its support by allowing them to count towards the required proportion of free places. The Board can easily make such regulations, which will ensure that these scholarships are given in the right way and in the right quarter, but I need not go into these details now.

The wording of the resolution will show that it is intended to ensure this by an income

limit applicable to all parents, and to safeguard the interests of the elementary school children by reserving a majority of the scholarships for them, but surely it is unfair to leave a certain proportion of needy children totally unprovided for, for in some cases this may mean that secondary school children will be withdrawn even before the elementary school age and will grow up without adequate education at all (this, I know, has occurred in the experience of many), and at the best these children would have to be transferred back to an elementary school, which could not be a satisfaction from an educational point of view; in consideration of these facts we feel that we are justified in pressing on the Government for immediate consideration this point affecting national education. After all, we are only asking the Board to undertake what Mr. Pease himself voiced and sent out to all schools in his letter of August 29th last, when he urged that we should see to it that the 7,000,000 children and those who follow them in the linked generations of school life should come to their task well equipped.

It is, therefore, with a strong conviction of its importance and urgency that I urge the Conference to-day to pass the following resolution, which, without injuring in any way the prospects of the elementary school child, will remove a great injustice from a number of equally needy children.

That in the interests of national education it is expedient that in the award of "free places," while the majority of such places shall be reserved for children from public elementary schools, some places shall be thrown open to all children of parents whose income falls below a certain limit irrespective of the place of previous education, such free places to be included in the percentage qualifying for the grant.²

SCHOOLS AND POSSIBLE AIR-RAIDS.

MANY a schoolmaster and schoolmistress is experiencing occasional and perhaps frequent anxiety, not less real because it is not much talked about, lest the children in their charge should become the victims of a hostile air-raid. The possibility is, of course, greater in some districts than in others, but there are certainly thousands of schools which are by no means exempt from peril. Some of the local authorities, we have reason to believe, have furnished guidance to teachers as to "what to do in case of an air-raid"—guidance more or less complete and satisfactory. We think, however, that there are few cases in which it will not still be an advantage to take the advice of the British Fire Prevention Com-

² This resolution was passed *nem.-con.* by the Conference.

mittee. This committee was founded eighteen years ago, and its council includes many distinguished persons. It is no hasty improvisation, but has existed long enough to be able to speak with authority upon the prevention of disaster in connection with fires.

The committee had issued a general air-raid "Warning" already, but this document did not quite meet the case of schools when occupied. It has therefore been deemed advisable to issue a special "Warning" to educational establishments, in respect of which many inquiries have reached the committee. This special "Warning" is noteworthy, not only for the positive directions and precautions it contains, but also for the advice it gives as to what *not* to do in case of danger. We are authoritatively warned, for example, on no account to spend money on patent powders as extinguishers, glass hand-grenades, or similar types of minor fire appliances now being hawked about; and we are told that if we have them we had better not trust to them. We are also warned that certain squirts or extinguishers contain chemicals that are liable to form noxious gases, and are therefore unsuitable. If such appliances are desired, a written warranty should be obtained that they comply with the specifications of the Board of Trade, of H.M. Office of Works, of the Metropolitan Police, or of the committee.

The head of a school, says the committee, should have a definite plan of action ready, adapted to the character of the school premises and the circumstances that are likely to arise when the children are in the class-rooms, in the hall, or in the playground. There should be a definite allotment of duties, well understood by every subordinate, including caretakers. Exit drill, and practice in the use of first-aid fire appliances, should be more frequent than usual while the war lasts. Emergency exits, seldom used at ordinary times, should now be well known to the children. And the promptest way of calling for assistance from the police, the fire brigade, or any other authority considered desirable should be clearly understood.

We may add that copies of the "Warning" (No. 20), some of the contents of which we have indicated, may be obtained *gratis* by any school authority or head of a school who will apply, sending a large, stamped envelope, to the British Fire Prevention Committee's offices, 8 Waterloo Place, Pall Mall, S.W. The committee will also send a draft plan of action, which, however, is to be regarded as confidential, because, we suppose, nothing can be gained by publishing apparently alarmist advice, to be read by all and sundry. We think that the action taken by the British Fire

Prevention Committee is timely and useful, and we certainly advise heads of schools, especially those who are still in doubt as to the precautions that ought to be taken, to avail themselves of the committee's expert counsel.

THE SPIRIT OF SCIENCE.

By R. A. GREGORY.

Professor of Astronomy, Queen's College, London.

I.

All wish to know, but few the price will pay.—JUVENAL.

All science has one aim, namely, to find a theory of Nature.—EMERSON.

Nature alone is always true to herself; she alone through the ages never lies, never changes, never hesitates, ever presses onwards.—EDEN PHILLPOTTS.

There are three voices of Nature. She joins hands with us and says Struggle, Endeavour. She comes close to us, we can hear her heart beating, she says Wonder, Enjoy, Revere. She whispers secrets to us, we cannot always catch her words, she says Search, Inquire. These, then, are the three voices of Nature, appealing to Hand, and Heart, and Head, to the Trinity of our Being.—PROF. J. ARTHUR THOMSON.

SINCE dawn the man had been seated on a stone at the bottom of a ravine. Three peasant women on their way to the vineyards exchanged "Good day" with him as they passed to their work. At sunset when they returned, the man was still there, seated on the same stone, his eyes fixed on the same spot. "A poor innocent," one whispered to the others, "*pe' caïre!* a poor innocent!" and all three made the sign of the cross. Fabre, the incomparable naturalist, patiently labouring to discover what is instinct and what is reason in insect-life, is to the vintagers an object of supreme commiseration, an imbecile in God's keeping, wherefore they crossed themselves.

Members of the University of Pisa, and other onlookers, are assembled in the space at the foot of the wonderful leaning tower of white marble in that city one morning in the year 1591. A young professor climbs the spiral staircase until he reaches the gallery surmounting the seventh tier of arches. The people below watch him as he balances two balls on the edge of the gallery, one a cannon ball weighing a hundred pounds and the other a shot weighing one pound. The balls are released at the same instant, and are seen to keep together as they fall through the air until they are heard to strike the ground at the same moment. Nature has spoken with no uncertain sound, and has given an immediate answer to a question debated for two thousand years.

"This meddlesome man Galileo must be

suppressed," murmured the university fathers as they left the square. "Does he think that by showing us that a heavy and a light ball fall to the ground together he can shake our belief in the philosophy which teaches that a ball weighing one hundred pounds would fall one hundred times faster than one weighing a single pound? Such disregard of authority is dangerous, and we will see that it goes no further." So they returned to their books to explain away the evidence of their senses; and they hated the man who had disturbed their philosophic serenity. For putting belief to the test of experiment, and founding conclusions upon observation, Galileo's reward in his old age was imprisonment by the Inquisition, and a broken heart. That is how a new scientific method is regarded by guardians of traditional doctrine.

The most original experimenter the world has ever seen is lecturing before a distinguished audience at the Royal Institution in London. He shows that when a magnet is brought suddenly near a coil of wire a slight current of electricity is produced in the wire. The experiment is not very impressive, and a lady probably voiced the feelings of most of the audience when she asked afterwards, "But, Professor Faraday, even if the effect you explained is obtained, what is the use of it?" The memorable reply was, "Madam, will you tell me the use of a new-born child?"

Lecky, in the introduction to his "Democracy and Liberty," says that the whole great field of modern scientific discovery seemed out of the range of even such a scholar and statesman as Mr. Gladstone, and that when Faraday was endeavouring to explain to Gladstone and several others an important new discovery in science, Gladstone's only commentary was, "But, after all, what use is it?" "Why, sir," replied Faraday, "there is every probability that you will soon be able to tax it!"

To cultured people Faraday's discovery of a means of producing electricity by mechanical movement seemed trivial; to the schoolmen of the Middle Ages, Galileo's appeal to the court of Nature against the judgment of authority was impertinent; and to the peasant, Fabre's patient study of insects suggested imbecility.

Three typical scientific workers are here represented; and we see the attitude of three different classes of people towards them. There is, first of all, the naturalist who seeks knowledge purely for its own sake, and considers no vigil too long if at the end a corner of the veil behind which the mysteries of Nature are hidden has been lifted. He continually sees new beauties in the features of his mistress and new wonders in all her ways. Sufficient for him is the satisfaction he feels at

each discovery, and he cares not whether his studies have any value beyond that which he derives from them. In a world of hustle, such lovers of Nature are regarded as creatures to be pitied, if not held up to ridicule, by people who cannot understand why anyone should devote himself to a subject without expecting personal or public profit from it.

Of a different type is the iconoclast—the breaker of images—rebellious against authority, impetuous to prove that the old idols are false, impatient with the world because of its indifference to the new gospel he has to teach. This man is not content to see things for himself; he desires to convince others of the truth revealed to him, and single-handed he is prepared to storm the citadel of traditional belief. In all ages he is a disturber of the peace, and is as unwelcome in scientific circles to-day as he was to the contemplative philosophers of the Middle Ages or before. But be assured of this: you may crucify the body of such an apostle, or you may visit him with the despair that follows upon neglect, but if his torch has been lighted from the divine fire of truth and righteousness it cannot be extinguished.

Most men of science are neither suppliants at the feet of Nature nor fiery advocates of truth wrested from her, but by critical inquiry into the origin of her strength and weakness they hope to discover the means of subduing her. She is cross-examined, tested, analysed, and every artifice or weapon which seems likely to induce her to reveal the secrets which she holds is brought into requisition. She is a Katharine to be tamed by the Petruchio of science rather than a Juliet to be worshipped by a love-sick Romeo. Only those who consider her worthy of battle have the patience or the power to effect a conquest. From whatever side she is approached obstacles arise which prevent a clear vision of her; and infinite labour as well as strong desire are necessary for every step of advance.

Reward—as the world understands it—for work done or results obtained is the last thought of a student of science. "I have no time to make money," was the reply of the naturalist, Louis Agassiz, to an offer to lend himself to a legitimate and tempting financial scheme. Napoleon the Third once expressed surprise to Pasteur that the great investigator did not endeavour to make his discoveries and their applications a source of profit. "In science," Pasteur replied, "men of science would consider that they lowered themselves by doing so." In a conversation with Lady Priestley, Pasteur remarked, "I could never work for money, but I would always work for science." If he had chosen to keep his discoveries to himself he could have been one of

the most wealthy men in the world, but he gave them to the human race, and was content to end his career as a professor of chemistry in receipt of a modest salary from the Government of his country.

Faraday on one occasion said to Tyndall that, at a certain stage of his career, he was forced definitely to ask himself, and finally to decide, whether he would make wealth or science the pursuit of his life. He could not serve two masters, and he chose science. After the discovery of magneto-electricity his fame was so noised abroad that the commercial world would not have considered any fees too high for the aid of abilities like his. Tyndall says he might with ease have realised an income of £10,000 a year during the last thirty years of his life, yet he earned almost nothing by professional services.

Taking the duration of his life into account, this son of a blacksmith, and apprentice to a bookbinder, had to decide between a fortune of £150,000 on one side, and his undowered science on the other. He chose the latter and died a poor man. But his was the glory of holding aloft among the nations the scientific name of England for a period of forty years. —TYNDALL.

The invention of the miner's safety-lamp by Sir Humphrey Davy was based upon scientific researches described by him to the Royal Society between 1815 and 1817. The investigations were undertaken by him at the request of a "Society for Preventing Accidents in Mines" formed in 1813 in consequence of the increase of colliery explosions as pits of greater depth were worked. The society looked to scientific men to provide "a cheap and effectual" remedy for these calamities, and Davy's assistance was secured in 1815, after a number of impracticable suggestions had been considered.

As the result of experiments, Davy discovered the principle upon which safety-lamps are constructed, namely, "that explosive mixtures of mine-damp will not pass through small apertures or tubes; and that if a lamp or lanthorn be made air-tight on the sides, and furnished with apertures to admit the air, it will not communicate flame to the outward atmosphere."

Davy might have made a fortune by his discovery, by taking out a patent for the invention of the safety-lamp, but he refused to do so. One of his friends, Mr. John Buddle, who urged him on one occasion to secure this recompense for his investigations and their result, said, "I felt that he did not contemplate any pecuniary reward; and in a private conversation I remonstrated with him on the subject. I said, 'You might as well have secured this invention by a patent, and re-

ceived your five or ten thousand a year from it.' Davy's reply was, 'No, my good friend, I never thought of such a thing; my sole object was to serve the cause of humanity, and if I have succeeded, I am amply rewarded in the gratifying reflection of having done so.'"

When Dr. Roux, director of the Pasteur Institute in Paris, was awarded the Osiris Prize of £4,000 for the discovery of the "anti-diphtheria serum," which has been the means of saving the lives of many thousand children, he made over the whole of the money to the institute of which he is the head, although he is relatively a poor man. The founder of the prize, M. Osiris, one day asked him why he had given the money to the institute. Dr. Roux replied:—

All that I am, I owe to the Pasteur Institute, for all my experiments and discoveries have been made there. Besides, the Institute is very poor, for we have no income except what we make by the sale of serums, and though that brings in enough to keep the establishment going, some fresh remedy may any day be discovered, in which case I fear the Institute would have to close its doors for want of funds.

The millionaire said nothing at the time, but at his death it was found that he had left the bulk of his wealth, amounting to nearly one and a quarter million pounds, to the Pasteur Institute, as a token of admiration for the scientific attainments and self-abnegation of Dr. Roux.

A correspondent asked Newton's permission to publish in the "Philosophical Transactions of the Royal Society" the solutions, which Newton had sent him, of some mathematical problems. Newton was at a time of life—his age was about twenty-seven—when most men wish to obtain credit for their work, but he particularly asked that no mention should be made of his name in connection with this and like matters. "For I see not," he added, "what there is desirable in public esteem were I able to acquire and maintain it. It would perhaps increase my acquaintance, the thing which I chiefly study to decline."

Newton was, indeed, never hasty in announcing his discoveries, and had none of the spirit of rushing into print to claim priority, to which some investigators attach so much importance. After he had invented the reflecting telescope in 1668, he allowed the instrument to lie by him for several years before its existence became known to some of the Fellows of the Royal Society, who induced him to send it to the society, where it is now carefully preserved. His important observations of the compound nature of sunlight, a beam of which he decomposed by passing it through a glass prism, were not communicated

to the society until 1672, though they were made before the invention of the reflecting telescope; and his discovery of the law of gravitation was completed several years before Halley knew of it and was able to make it known to the world.

What, then, are the motives of scientific work, if the praise and rewards of the world have no meaning? Chiefly love of knowledge and the joy of discovery; and possessing these things the man of science faces boldly all difficulties, and is undaunted by danger. During an epidemic of cholera in Paris in 1865, Pasteur for a time undertook the study of the disease above the cholera ward of a hospital. Henri Saint Claire Deville once said to him, "Studies of that sort require much courage." "What about duty?" said Pasteur simply.

All who labour to extend knowledge and establish truth are making for righteousness; though they sail in different seas they have the same guiding star, and it is set so far away in infinity that compared with its distance their paths are one. Let, then, the captain of each ship shape his own course, and not concern himself with the tracks of other navigators; the new lands encountered may present very diverse characters, but each explorer is expected to describe only what comes within his own range of observation. He can know nothing of what pioneers in other directions have seen, but with hope at the helm and truth at the prow he strikes the course for which his ship was chartered, even when it seems to be crossing the tracks of other vessels or landing him upon the rocks. This is the spirit in which the scientific investigator sets out for unknown lands. "When I am in my laboratory," said Pasteur, "I begin by shutting the door on materialism and on spiritualism; I observe facts alone; I seek but the scientific conditions under which life manifests itself."

Facts which appear to be opposed to prevailing belief or theory are often reached in science, but if they stand unaltered after being subjected to rigorous and critical examination they must be adhered to, and the belief or theory abandoned. In the world of natural knowledge no authority is great enough to support a theory when a crucial observation has shown it to be untenable. Scientific work must thus be carried on with an open mind, uninfluenced by preconceived ideas, critical of its own observations, cautious in arriving at conclusions from them, and ready to revise any statement which has not stood the test of further experiment or reasoning.

The philosopher should be a man willing to listen to every suggestion, but determined to judge for himself. He should not be biassed by appearances; have no favourite hypothesis; be of no school; and in doc-

trine have no master. He should not be a respecter of persons, but of things. Truth should be his primary object. If to these qualities be added industry, he may indeed hope to walk within the veil of the temple of Nature.—FARADAY.

The study of nature is elevating, and its material value is of the highest, yet it is deplorably neglected, with the result that only very rarely is the simplest scientific subject referred to accurately in the works of literary men. Our guides and counsellors, not only in the periodical Press, but also in less ephemeral publications, are, in the great majority of cases, unaware of the most obvious facts and phenomena of Nature, and have no acquaintance with the most elementary vocabulary of science. In everything that relates to the material universe around them, they are blind leaders of the blind; and they call their darkness light. They are indifferent to the wonderful growth and extent of scientific knowledge, and live in a paradise in which rounded phrases and curious fancies are of more importance than actual facts. In such a world a one-eyed man can be king. A more enlightened view will only be obtained when it is realised that an educated man must know something of science as well as of literature. The education which ends in literary culture without science is just as incomplete as one which promotes scientific knowledge without the power of clear expression.

Do you wish to cultivate supreme regard for truth? Then let education include the study of Nature, for in dealings with her every false coin is inexorably nailed to the counter. Do you wish to create a sense of moral responsibility? Then learn from Nature that every act has a consequence, and every sin a penalty. Is a habit of mind required which will not be deceived by the noisy huckster of sensational statements? Then give attention to training in science, by which a critical faculty is developed that enables fact to be distinguished from fable, and is cautious in arriving at conclusions. Are satisfaction with the superficial and a desire for continuous excitement to be the characteristics of the new generation? If not, see that interest is aroused in the nobler views of life opened by scientific knowledge. Regard for veracity, patience, logical thought, responsibility, discipline, and the dignity of work, are all taught by the study of science; and these attributes are as desirable in every one of us as in the investigator whose life is an exemplar of them.

The pleasure derived from the discovery of some secret of Nature unknown before except to the architect of the universe surpasses all the rewards the world can give. It is a compensation which takes the place of worldly

riches, and enables unselfish work to be done from which others often make commercial gain. While men engaged in other pursuits lose their interest in later life, in the man of science the love of Nature and the desire for new knowledge is eternal. Dr. Weir Mitchell related that once, at his table, someone asked that ever-happy naturalist, Joseph Leidy, if he were never tired of life. "Tired!" he said, "not so long as there is an undescribed intestinal worm, or the riddle of a fossil bone, or a rhizopod new to me." These subjects may seem uninspiring, but the words reveal the spirit of the ardent lover of a mistress of unfading charm.

Testimony to the complete satisfaction and perennial interest derived from the study of Nature has been given by many men of science. "In my laboratory," said Robert Boyle, "I find that water of Lethe which causes that I forget everything but the joy of making experiments." This great natural philosopher is said to have remarked that he feared death only because after it he would know all things, and no longer have the delight of making discoveries. Dumas, the renowned French chemist, was a man of affairs as well as a man of science; yet he said:—

The recollections of an already long life have permitted me to become acquainted with a great variety of personages. And if I call on memory to picture to me how the type of true happiness is realised on earth I do not see it under the form of the powerful man clothed in high authority, nor under that of the rich man to whom the splendours of luxury and the delicacies of well-being are granted, but under that of the man of science, who consecrates his life to penetrating the secrets of Nature and to the discovery of new truths.—J. B. A. DUMAS.

So little done, so much to do, are the first and last thoughts of the man of science. A short time before his death, Sir Isaac Newton expressed the memorable sentiment: "I do not know what I may appear to the world, but to myself I seem to have been only like a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me."

This was Newton's estimate of his work, yet it is related that when the Queen of Prussia asked Leibnitz his opinion of Newton, Leibnitz said that taking mathematicians from the beginning of the world to the time when Newton lived, what he had done was much the better half.

The less a man knows, the more content he is with his intellectual capacity and outlook; it requires a great man to realise the imperfection of his knowledge. At the jubilee of Lord Kelvin, celebrated at the University of

Glasgow in 1896, representatives of "light and leading" from all parts of the world assembled to do honour to him. In science and in invention his work belongs to the front rank of results of human thought and ingenuity. Yet what did Lord Kelvin say in reply to the congratulations expressed upon his service in the cause of scientific progress?

One word characterises the most strenuous of the efforts for the advancement of science that I have made perseveringly during fifty-five years; that word is *failure*. I know no more of electric and magnetic force, or of the relation between ether, electricity, and ponderable matter, or of chemical affinity, than I knew and tried to teach to my students of natural philosophy fifty years ago in my first session as professor.—KELVIN.

Far more than anyone else in his day and generation, Lord Kelvin contributed to the advancement of science and the application of natural knowledge to the use of mankind; yet in his mind the predominant idea was not satisfaction at success, but disappointment at the failure of his persevering efforts during fifty years to understand the omnipresent ether of the physicist and the manner in which it is concerned in electric and magnetic forces. The achievement of ocean telegraphy, the improvement of the compass and sounding-line, the hundreds of papers on properties of matter, provide sufficient justification for a score of scientific careers, but to Lord Kelvin they seemed insignificant in comparison with the unsolved problem of the theory of matter which would unify them all. He knew that when the key to the riddle of the relation between ether and matter is discovered, mankind will be able to enter the treasure-house in which Nature's secrets are stored. Such men as Lord Kelvin are learners always, because they realise that for one problem solved, one principle discovered, one structure completely described, there are a thousand of which they understand nothing.

Man as a physical being is but a microscopic part of the universe, yet his mind carries him ever upward, and with spirit bold and unconquerable he seeks to reach the summit of Mount Olympus. Infinite space remains to humble his pride in spite of the knowledge he has obtained of the starry heavens; yet he pursues his inquiries into the unknown, and his children's children will continue the search.

It is said that Thales of Miletos, who was the first of the Greeks to devote himself to the study of the stars, was on one occasion so intent upon observing the heavens that he fell into a well, whereupon a maidservant laughed and remarked, "In his zeal for things in the sky he does not see what is at his feet." Many

men have been laughed at since then for gazing heavenward when their minds might be occupied with affairs of earth. There will always be the mind that strives to reach to the skies, and the scoffer who regards all such aspirations as folly.

Two men stood looking through the bars,
One saw the mud, the other saw the stars.

PERSONAL PARAGRAPHS.

THE death took place on July 6th at Oulton Old Hall, Stone, Staffordshire, of Mr. F. E. Kitchener. Mr. Kitchener was educated at Repton, Rugby, and Trinity College, Cambridge. Upon leaving the University he accepted a mastership at Wellington College, and afterwards went to Rugby, where he remained for thirteen years. He then became headmaster of Newcastle High School, Staffordshire, an office that he held from 1875 to 1891. Mr. Kitchener afterwards served as Assistant Commissioner to the Royal Commission on Secondary Education, and became deputy chairman of the Staffordshire Education Committee. Among the works that he published is a memoir of Archbishop Temple and a pioneer book on practical geometry entitled "Geometrical Note-book." His influence on education in Staffordshire will be much missed.

* * *

CAPT. J. G. BUSSELL, 7th Royal Sussex Regiment, was killed by a "sniper" on June 28th. Capt. Bussell was educated at St. Edward's School, Oxford, and on the outbreak of the South African War enlisted as a trooper in the Oxfordshire Yeomanry, and saw considerable active service. On his return he went to Brasenose College, Oxford, and was an officer in the University Volunteers. He took Orders, and became a master at Marlborough College, where he worked in the O.T.C. When the war was declared he obtained a commission as captain in the 7th Royal Sussex, with whom he went to the front early in June.

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LIEUT. W. S. BIRD, 6th Battalion of the King's Royal Rifle Corps, was killed on April 9th. He was educated at the Grange, Eastbourne, where he was captain of the cricket and football eleven, and at Malvern, where he was head of the school house. As lieutenant of the School House Corps he won the school cup. He then went to New College, Oxford, where he captained the Oxford cricket eleven. He was a master at Ludgrove School for eight years, and was gazetted to the 6th King's Royal Rifles in January from the O.T.C.

THE death is announced of Prof. E. S. Beesly. Prof. Beesly was the son of an Evangelical clergyman, who sent him to Wadham College, Oxford, which had rejected Pusey, and was then the bulwark of Protestantism. He had never been at a public school, and his training did not fit him to obtain a scholarship at the university. Upon leaving the university Mr. Beesly became a master at Marlborough, and remained there until 1859, when he was appointed Professor of History at University College, and a year later Professor of Latin at Bedford College, and principal of University College Hall. Among his works, which are very numerous, may be mentioned his studies of Cataline, Clodius, and Tiberius.

* * *

MISS GREEN, senior mistress of the Grammar School, Northallerton, the eldest daughter of Prof. S. W. Green, died of heart failure after an operation on July 8th.

* * *

MISS BECK, for thirty-one years headmistress of Palmers School, Grays, died after a long illness, on July 6th.

* * *

MISS E. E. CONSTANCE JONES, Mistress of Girton College, Cambridge, has decided to resign at the end of the academic year. Miss Jones was educated at Alstone Court, Cheltenham, and at Girton College, Cambridge, where she took a First in the Moral Science Tripos. Miss Jones then became lecturer in moral science at Girton, and examiner in logic in the Cambridge Higher Locals. After occupying the position of vice-mistress of Girton for seven years, she succeeded Miss Welsh as mistress in 1903. During her term of office a debt of £50,000 has been paid off, and the College has steadily increased in prosperity. In addition to her books on moral philosophy Miss Jones has written a history of the College.

* * *

MISS MURIEL DAVIES, assistant lecturer in education at the University of Birmingham, has been appointed warden of the women students of the University College of North Wales, and head of the University Hall, Bangor. Miss Davies was formerly a student of the University College of North Wales and a scholar of Lady Margaret Hall, Oxford. Afterwards she was history mistress at Queen Anne's School, Caversham, and at Edgbaston High School.

MR. J. LL. DAVIES, science master at Perse School, Cambridge, has been appointed headmaster of the High School, Cardiff. Mr. Davies was educated at Alderman Davies' School, Neath, and University College, Aberystwyth, and Emmanuel College, Cambridge. He became tutor of Carmarthen Training College in 1905, and a master at Perse School in 1906.

* * *

MR. E. E. THOMPSON, senior mathematics and science master and house master of the Grammar School, Thetford, has been appointed headmaster of the County School, Diss. Mr. Thompson was educated at Northampton County School and St. John's College, Cambridge, where he took the Natural Science Tripos in 1905. He became a master at Banham Grammar School, Norfolk, in 1906, and went to Thetford in 1909.

ONLOOKER.

SECONDARY EDUCATION IN ENGLAND.

As was pointed out in our last issue, the recently published report of the Board of Education (Cd. 7,934) for the year 1913-14 is provided with a special preface which gives a brief account of the effects of the war on the public educational system of the country, and particulars were given as to the depletion both of the staffs and classes in schools of different grades. In addition, the report contains the usual abundance of information respecting every department of the work aided and encouraged by the Board.

In pursuance of the plan adopted in recent reports of the Board, the first chapter on this occasion deals historically with one branch of the Board's activity, the methods adopted in England for the inspection of schools being selected for treatment this year. The sketch runs to some thirty-six pages, which are summarised as follows:—

INSPECTION OF SECONDARY SCHOOLS.

Historically, the State approached the question from three quite different directions. First, as supervisor of endowed charities, the State came, as it were, consequentially to supervise the administration of such secondary schools as were maintained from that source. Secondly, as promoter of science and art instruction in schools of all kinds, the State came to exercise with regard to secondary schools that somewhat more detailed supervision which is bound up with the operation of State grants. Thirdly, the Act of Parliament which united the first two functions in one Department of State empowered that same Department to inspect secondary schools, not as supervisor of charities or guardian of the administration of State grants, but simply as the central and official educational Department of State, qualified in virtue of its standing and its experience to inspect, advise upon, and assist the organisation and working of secondary schools.

To understand the operation of State inspection to-day, it is necessary to remember this threefold origin. It is true that, of the three powers combined by the Board of Education Act, the second has proved predominant in practice; the great majority of secondary schools now inspected by the Board are grant-aided schools. But the two other powers have borne a most important part in shaping the character of State inspection as it exists to-day, and are still by no means obsolete. It is due to the first that the State was able, in the reconstruction of secondary education following on the Act of 1902, to assist in bringing into co-operation the new local education authorities and the governing bodies of endowed schools. It is due to the third that the scope of the State's inspection of secondary schools still extends beyond the scope of its grants; that the State enters by invitation where it cannot enter as of right, and advises when it cannot enforce.

In the fields of elementary and technical education, though the variety of activities is endless, the variety of administrative relation is small. In the main and primarily, the State is dealing with public and responsible Local Education Authorities, who supply and control the bulk of the educational service of their areas. But in the field of secondary education there are other partners to the administrative relation. There is the governing body, often independent, often older in its corporate educational life than either the State, or the local, education authority, generally endowed, and sometimes so much so as to make it independent of all public aid. There are the private schools, which are now beginning to feel their way through State inspection towards a more secure place in the national provision of secondary education. And, lastly, there are the various organisations for the examination of secondary schools, which are mainly controlled by the Universities, and which are so necessary a part of secondary-school organisations that the State can no longer afford to be out of touch with them.

In addition to their administrative position, the actual nature of secondary schools has necessarily exercised a determining influence on the methods of inspection adopted by the State. A secondary school covers a wide variety of subjects: it may carry many of them, and frequently does carry them, to an advanced stage; the staff may include specialists of acknowledged eminence in various branches of learning. Further, the nature and well-being of the school is by no means to be judged by a mere review of the treatment of different subjects in the curriculum: there is a school-life which must be grasped as a whole, relating together the various elements in the curriculum, and much that lies beyond the curriculum—a life in which there is often a strong element of historic continuity. Hence the secondary school in its very nature is adapted to a method of inspection involving intensive study at extended intervals, rather than a more cursory review at short intervals.

Thus, both from the administrative and from the educational side, it may be claimed that the method of full inspection, which is the outstanding feature

of present-day secondary inspection, has developed in adaptation to existing conditions. Administratively, the full inspection, followed by a conference with the governing body, enables the State to utilise most effectively its wider experience of educational conditions throughout the country in advising governing bodies and local educational authorities on the organisation of secondary education in their area. Educationally, the close review by a body of inspectors of the whole of a school's activities, conducted in concert with the headmaster and the teaching staff, enables the State to formulate that constructive criticism which in experience has proved most useful to the well-being of a secondary school. Without claiming finality for this or any other method of inspection, it may be said that, in the educational conditions which have existed since 1902, the method of full inspection has served a definite purpose, and has enabled the State, as perhaps no other method could have done, at once to discover and to discharge its appropriate function in the field of secondary education—to safeguard the public against the misapplication of public funds, to keep the public informed of the progress of secondary education, to bring general experience to bear on particular problems, to advise and assist those engaged either in the organisation of education or in the actual conduct of schools.

SCHOOLS, PUPILS, AND TEACHERS.

The report provides also statistical details as to the number of schools on the efficient list and of the pupils in them, the number of teachers, particulars as to the number of free places, and the length of the school life of the pupils.

The total number of schools in England regarded as eligible for grant during 1913-14 was 910, as compared with 898 during 1912-13. Of these, 421 were controlled by local authorities, 420 were endowed schools or schools of a similar type, 25 were schools of the Girls' Public Day School Trust, and 44 were controlled (whether with or without a formal educational trust) by Roman Catholic Orders or Communities. In these 910 schools there were, on January 31st, 1914, 170,119 pupils (90,793 boys and 79,326 girls), as compared with 158,452 pupils (84,936 boys and 73,516 girls) in the 898 schools on January 31st, 1913.

In addition to the 910 schools on the grant list there were 117 other schools recognised by the Board as efficient during 1913-14, being an increase of 7 on the number recognised as efficient during 1912-13. Of these, one was controlled by the local authority, 92 were endowed schools or schools of a similar type, 3 were controlled by Roman Catholic Teaching Orders, and 21 were private schools. In these 117 schools there were in 1913-14, 22,138 pupils (13,506 boys and 8,632 girls), as compared with 20,226 pupils (12,092 boys and 8,134 girls) in 110 schools in 1912-13.

Thus during the year 1913-14 there were in England altogether 1,027 schools recognised by the Board as efficient, educating 192,257 pupils (104,299 boys and 87,958 girls), as compared with 1008 schools in 1912-13 educating 178,678 pupils (97,028 boys and 81,650 girls).

On January 31st, 1913, there were in the 898 schools

then on the Board's grant list 9,430 full-time teachers, of whom 4,710 were men and 4,720 women. The corresponding figures for the previous year were 9,132 full-time teachers (4,578 men and 4,554 women) in 885 schools. These figures give the number of pupils per teacher as 16·5 at the beginning of 1912, and 16·8 at the beginning of 1913.

To these numbers, however, must be added in estimating the teaching power available, a large number of part-time teachers. These are engaged under very varying conditions, and their strength on the staff ranges from half or more of a full unit down to the fractional amount represented by occasional visits to the school for the purpose of giving some special instruction, e.g., the weekly visit of a county instructor of physical exercises or handicraft. On January 31st, 1913, there were in all 3,160 of these part-time teachers (1,702 men and 1,458 women). Taking these as on the average representing one-third of a unit each, which is perhaps not far from the truth, they would raise the total number of the teaching staff to 10,483 (5,277 men and 5,206 women), so that there would be one teacher to every 15·1 pupils.

FREE PLACES.

Of the 910 schools on the grant list for the year 1913-14, 860 were in receipt of grant on the full scale, one condition of which is compliance with the requirements of the regulations as to the provision of free places. This requirement is normally 25 per cent. of the entrants in the previous year; but it is the practice of the Board to consider cases where this requirement can be shown to place, apart from merely transitory circumstances, any undue burden on a school. In the year now under review there were 105 schools in which, upon this consideration, the normal requirement was reduced, of which schools 54 were required to offer 10 per cent., 37 12½ per cent., 9 15 per cent., and 5 20 per cent. of free places. The total number of these schools is somewhat less than in the previous year, 105 out of 860 as against 119 out of 846.

The number of schools which were on the grant list before the new provisions accompanying increased State aid came into operation, and which took advantage of the special provision enabling them to continue to receive grant on a lower scale without compliance with the new regulations, was 50 in the year under review. On January 31st, 1914, they were giving education to 9,520 pupils. It is, however, to be noted that these schools, although they are not subject to the free place requirements, do in fact provide a considerable number of free places by means of foundation scholarships or by voluntary arrangements. In relation to the Board's free place requirements, the following table shows the numbers of schools, and of pupils, in England, as on January 31st, 1914:—

	No. of schools	No. of pupils
Schools in which the full 25 per cent. is required	755	136,686
Schools in receipt of higher grant, including those in which the 25 per cent. requirement is reduced	860	160,599
Schools on the grant list, including those on the lower grant scale	910	170,119

LENGTH OF SCHOOL LIFE.

In considering the comparative figures as to school life for the year now dealt with, it will be instructive to set forth the average for the whole country of school life over the age of 12, and of leaving age, in secondary schools on the Board's grant list, for successive triennial periods during the last six years.

	1907-10		1908-11		1909-12		1910-13	
	School Leaving	life age	School Leaving	life age	School Leaving	life age	School Leaving	life age
	(Years and months)	(Years and months)	(Years and months)	(Years and months)	(Years and months)	(Years and months)	(Years and months)	(Years and months)
Boys ...	2'7	15'6	2'8	15'7	2'8	15'7	2'9	15'7
Girls ...	2'7	16'0	2'9	16'0	2'10	16'0	2'11	16'0

It will be seen from these figures that while the leaving age has remained almost unchanged, there has been a small but steady increase in the length of school life. This means that school life is being lengthened, on the whole, by earlier entry rather than by staying at school to a later age.

As pointed out in previous reports, the possession of a free place continues to have a marked effect in prolonging the school life of the holder. Statistics are now available with regard to the school life of all pupils who left grant-earning secondary schools in England during the three years 1910-13. An analysis of the figures shows that the free-place holders as a whole both enter school earlier and stay to a later age than the fee-paying pupils. While the average school life, after the age of twelve, of boys holding free places was three years three months, that of the fee-paying boys was only two years six months, the average age at leaving being in the one case fifteen years ten months, and in the other fifteen years five months—that is to say, the free-place boys were under instruction nine months longer and left school five months older than the fee-payers. A similar comparison of statistics for girls shows a still greater disparity in the length of school life, the figures being for free-place holders three years nine months, and for fee-payers two years six months; the average leaving age was in the one case sixteen years six months, and in the other fifteen years nine months.

HISTORY AND CURRENT EVENTS.

WHEN our readers see these paragraphs the great world-war will have lasted a twelvemonth, and all hopes of a speedy termination have for some time vanished from our minds. The situation is to a certain extent parallel to that of the years 1810-12, when Britain was triumphant on the seas and beyond, but as yet was only slowly succeeding in the Peninsular War. In the west, trenches are won or lost, small advances are made by the British and their Allies, but to those of us who are not in the secrets of those in authority, it seems as if the mutual slaughter might go on indefinitely without result. In the east, the wave of battle has rolled forwards and backwards, but neither combatant can claim definite victory. The British and their Allies are advancing from three directions at least against Turkey, but their

progress is apparently slow. Our generation, unused to European war and faced with a war of unprecedented magnitude, is realising at last all that it involves, and the nation is rising to the height of the great argument.

THE prose literature of the war has been plentiful, and we have noticed in our columns some of the more important books, but there has not been much poetry because as yet the nation generally is feeling too deeply for words. Our readers will know some of the poems written at the beginning of the war, and *Punch*, as usual in times of great events, has voiced some of our truest thoughts. But we turn naturally to some older poetry written in war time, and we have been reading lately the Biglow Papers of James Russell Lowell. Everyone knows what his thoughts were in the war against Mexico. "Ez fer war, I call it murder," is a line of which we thoroughly realise the meaning, and one of the last poems written during the American Civil War expresses the feelings of many of the older ones among us who cannot take part in the fighting.

THE poems to which we have just referred, as well as some of Whittier's, were written during the period when the history of the United States was heroic, and the northern States were fighting for a principle. Since then, American history has been prosaic, their party contentions have centred round matters of commerce or even of personal rivalries, so that, for lack of vital interest, we in the British Isles have grown generally ignorant of their politics except when some great personality has dominated the scene. In Europe the years from 1864 to 1871 were great with events which seemed to us then instinct with a principle, that of nationality. Those were the years when Austria was expelled from Germany, the German Empire came into being, and the kingdom of Italy was formed. We have learnt since then how much that was base was mingled with the heroic of that time, and when in 1878 Russian advance against Turkey was checked, the history of Europe became also prosaic, and without open war the States have contended for colonies and commerce.

THIS contest for colonies and commerce has been accompanied with a constant growth in armaments until Europe has groaned beneath the burden of militarism, a burden far greater than that of the dynastic quarrels of the eighteenth century. From that burden, imposed on the peoples by their sovereigns—"enlightened despots" though these were—the French Revolution, enlarged in scope and activity by Napoleon, was an attempt to set Europe free, an attempt which, checked for a time by the despots restored in 1815, gained a large measure of success during the next fifty years. In 1870-71 it seemed as if Europe had attained a condition of equilibrium. As Napoleon may be regarded therefore as an instrument of Divine Providence to sweep away the evils of his time, may we see in Wilhelm II. another such instrument? He has shown to Europe what militarism really is, and

therefore we may hope for the fulfilment of Tennyson's prophecy, that when

"The heavens fill with shouting and there rained a ghastly dew

From the nations' airy navies grappling in the central blue,"

then

"The war-drum throbbed no longer and the battle-flags were furled

In the Parliament of man, the Federation of the world."

ITEMS OF INTEREST.

GENERAL.

THE ways in which teachers might be employed usefully during the summer holidays have been under consideration during the last few months. O.T.C. officers will no doubt find it easy to obtain employment as instructors. The Church Army and the Y.M.C.A. will, it is said, be glad to avail themselves of the services of schoolmasters. Some public schools have well-equipped workshops. At Cheltenham, for instance, the college engineering shop can turn out 250 shells a week. Bradfield College is co-operating with Messrs. Vickers, 'Ltd., in the making of shells and tools. Twenty boys go over from Eton every day to a factory two or three miles from the school, one-half working from seven until noon, the other half from one until six. In some districts the older boys and girls have already helped in the hay harvest.

SOME weeks ago, a letter from two masters and one mistress in King Edward's High School, Birmingham, was published in various newspapers, suggesting the organisation of teachers for work during the summer holidays. The results of their inquiries have now been issued. As regards work in munition factories, it appears that there is now no lack whatever of unskilled labour. Nor, according to inquiries made by the Board of Agriculture and Fisheries, do farmers seem in any want of such help as teachers and their pupils could supply. Lord Selborne suggests, however, that there may be a greater demand for assistance when the harvest begins, and recommends teachers to offer their services at the nearest Labour Exchange. On the whole, the writers conclude that teachers will find most useful employment in connection with the formation of the National Register. The Registrar-General states that all the local arrangements will be in the hands of the local registration authorities (borough, urban district, and rural district councils), who will doubtless welcome the services of teachers as enumerators or otherwise in their districts.

THE Board of Education has issued a special Circular to local education authorities with reference to the date of the annual school holidays. The Board of Agriculture and Fisheries reports that there will probably be a shortage of labour during the coming harvest, and it is, therefore, suggested that the school holidays should, in those areas which include or border upon agricultural districts, be arranged to coincide

with the probable date of the harvest. Many local authorities already make such an arrangement, but it is hoped that the practice will be adopted this year on a much larger scale.

THE President of the Board of Education was asked recently in the House of Commons whether he was taking steps to secure that children of school age should be paid a fair wage when employed in agricultural work. The questioner, Mr. Noel Buxton, implied that farm labourers were being dismissed in favour of boys who were paid inadequate wages. The President, in his reply, appealed to the humanity of employers and of local education authorities to secure reasonable wages for children so employed; and he has, since that date, addressed a letter to the Local Education Authority, in which he points out that unless the employer feels that it is worth while to pay something substantial for boy labour, the services of the boys cannot be of substantial value to the country, and therefore the boys had better be at school.

THIS is an important principle, and all those who feel that they should offer their services to the farmer should also feel that the best interests of the country, both now and in the future, will be served only if they receive fair wages for their work. Voluntary service even in war-time should never take the place of paid service, and should be confined to work which would not be performed unless volunteers sacrificed their time to do it. In connection with the production of useful commodities, voluntary service only puts an additional profit into the pocket of the producer, and does not necessarily benefit the State.

AT the present time it is impossible to emphasise too strongly the national importance of all agencies for promoting healthy infancy. Of such agencies, good schools for mothers are undoubtedly among the most effective. The circumstances, capacities, and requirements of the women for whose benefit such schools are established vary so widely, however, that special difficulties in thinking out and grading the instruction inevitably arise. Not merely wide experience, but a sympathetic understanding of particular needs must be brought to bear on the question if the movement is to be really successful. Both qualities are displayed in large measure in the Memorandum on Class Instruction at Schools for Mothers (Circular 912) recently issued by the Board of Education. Persons responsible for the organisation of such schools will be helped considerably by the particulars given of methods already adopted with success in various parts of the country and under widely different conditions.

IN general, the best opportunity of commencing anything in the shape of systematic instruction of mothers occurs in the afternoon when infants are brought to the centre for "consultation." The teaching commonly takes the form of a health-talk or of a sewing-class. Classes held on other days usually fall under one of three heads: (1) mothercraft and hygiene; (2) needlework; (3) cookery. These are chiefly attended by mothers who have belonged to the school for some time, and have learnt through the less formal health-

talks to appreciate the value of the teaching. In some cases more advanced instruction is arranged for the wives of well-to-do artisans and clerks. On all these activities Dr. Janet M. Campbell, the author of the Memorandum, gives expert guidance. The regulations under which grants to schools for mothers will be made by the Board of Education, in association with the Local Government Board's arrangements for granting aid to maternity centres, have been issued during the last month.

THE Board of Education has issued a Circular (915) directing the attention of local education authorities and teachers to the teaching of thrift in public elementary schools and to the provision of facilities for saving by school children. Increased thrift on the part of every class in the community is essential to the national welfare, not merely during the continuance of the war but after its close. By helping to develop habits of thrift among the children who in a few years will have to undertake the responsibilities of citizenship, and by training them in the exercise of the self-denial and foresight which thrift involves, the public elementary schools can render a national service of great value. Further, the influence of such training is not confined to the children, and does not stop with the school walls; what is said and done in the school has effect in many homes. But at the present time the teacher will naturally lay stress on the benefits of thrift, not merely to the individual but to the community. He can easily lead the older scholars to see that great expenditure of money is necessary for the successful prosecution of the war, and that, in order to defray it, the State must rely on the savings of individuals. His teaching should serve to bring home to the children the truth that saving is not a matter of private self-interest, but a service due to his country from every citizen. The Circular goes on to point out that the school cannot merely teach children about saving; by the establishment of a school bank it can do what is even more important—help them to practise saving.

OUR new colony, South-West Africa or "Bothaland," is larger than the Cape of Good Hope Province, almost two and a half times the size of the United Kingdom. On the edge of the Great Thirst Land of the Kalahari, the colony suffers a drawback from the lack of surface water, but considerable pioneer work has been done towards obtaining an adequate water supply from wells and borings, conveniently placed in regard to the railways and roads. The climate is suitable for Europeans as in Rhodesia, the mean temperatures at Swakopmund and Windhoek being 60° F. and 67° F. respectively, while night frosts cause damage to garden and orchard crops, and the minimum thermometer may register several degrees of frost. The rainy season occurs from December to April, and the rainfall resembles in total quantity and in seasonal distribution that of Rhodesia and the sheep-rearing areas of Argentina. These facts, coupled with the experience to be gained from the habits of the natives, who are cattle-rearers, indicate that "Bothaland" possesses immense possibilities as a ranching country; and since ranching in the Argentine and Australia has been normally succeeded by

wheat-growing and dairy-farming as the population has become denser, the new land promises another source of food-supply for the United Kingdom. Much has been learnt in British South Africa of the efficacy of sheep-dip, and a sympathetic and progressive Government could readily influence the development of this new possession. Ostrich-farming is a special local industry capable of development.

PERHAPS, at the moment, the chief asset of the colony lies in copper and diamonds. Diamonds were first discovered in 1908, and the output has steadily increased until it is worth annually more than a million and a half sterling. Copper mines have been worked at Tsumeb and in the Otavi valley, and progress has been steady, and the mines are connected with the railway system of the colony. The interested reader will find a long, important, and authoritative article upon the colony in the July number of the Bulletin of the Imperial Institute, an article on which these notes are based.

THE annual report of the Geological Survey throws a sidelight upon certain effects of the war. The necessity of supplying camps, etc., with water, and a demand for instruction in the principles of obtaining temporary supplies of drinking water at short notice, gave the staff additional work, and led to the publication of a guide to the south of England, which illustrates sites to be tried or to be avoided in regard to water supplies. Many inquiries concerning minerals and sands received attention, especially in reference to possible British sources of those minerals usually supplied by the enemy.

AT the Science Museum, South Kensington, a special warfare collection is on view; this collection includes a series of models of typical British warships, including H.M.S. *Good Hope* and *Lord Nelson*, and of British and foreign aircraft. With several of the aircraft models there are full-size engines and parts. Submarines are represented by a model drawing and photographs. Among the most important recent acquisitions of the museum are additions to the models of ships, which include a model of an armed East Indiaman (c. 1760), and a set of fourteen models of merchant vessels for the period 1874-1902.

THE July number of *The Child* contains a description of "A Maritime Hospital of Surgical Tuberculosis in Children." The Liverpool Invalid Children's Association, with the assistance of the education authorities of Liverpool and district, maintain this hospital-school on a site of fourteen acres, within 300 yards of the sea, exposed to the full force of the winds, on an open flat shore, with an extensive tidal area, at Leasowe, in the Wirral peninsula. The hospital is planned to accommodate 176 cases; just over half the accommodation is available. The situation is ideal in view of the stimulating, oxygenating, and re-mineralising action of the sea-air, which is an essential factor in the treatment of surgical tuberculosis.

EMPIRE DAY, 1915, was duly celebrated in the schools of the London County Council. In a circular addressed to the schools, Sir Robert Blair struck a high

note of patriotism in emphasising the rally of the Empire to the call for the defence of the best ideals of civilised communities. Stress was laid upon the share of the wide-set units of the Empire in the great conflict; India alone, for example, has contributed three times as many men as the total British forces at Waterloo in 1815. Quotations from Imperial statesmen were included to set off the facts regarding the contributions of men and gifts which have poured in from Britain Overseas to the Mother Country. No child who heard this outline of the meaning of Empire Day could help but be uplifted in spirit and roused to some fuller appreciation of the value to the human race of the dictum of Sir Charles Lucas, "At the present day, British Empire connotes British Liberty."

THE June number of the *Journal of Geography*, published at the University of Wisconsin, contains a report by a California committee entitled "Suggestions for the Improvement of Geography Teaching." The report is interesting to an English reader, for the recommendations are curiously familiar; teachers at present lack training, and arrangements should be made for special training as geographers and as teachers of geography; home geography should be well taught; geography should be taught in the advanced classes; relief models and a school museum are recommended; "the scientific classification of land forms should be simple and suitable to the age of the pupil, and not be the classification of the university-trained investigator." Special articles and notes are also given with reference to the Panama-Pacific Exposition at San Francisco and the meeting of the National Education Association at Oakland (Cal.) in August. Among the advertisements we note a peculiarly useful lantern-slide cabinet, which enables the observer to see sixty slides mounted in one frame at once; the advantage of such frames over the usual drawers will be obvious.

MR. ERNEST YOUNG, the headmaster of the County School, Harrow, is contributing a series of articles to *The Scout* on the organisation and training of scout troops. These articles are the result of three years' experience with a troop of 250 boys in the County School at Harrow. They give, week by week, details of the work to be done, and directions as to how to teach the subjects required by the scout. They are primarily intended for scoutmasters, patrol leaders, and others, who are inexperienced in the art of teaching, or of planning orderly and progressive courses of work, but they are likely to be of extreme value to any who wish to undertake scout work in schools, and have no practical experience of the movement. The first article appeared on July 24th, but the course of work is suitable for schools commencing in September. There will be a first series of about thirty-nine articles, providing a course of indoor and outdoor activities for the three terms of the year.

IN April last the Cardiff Education Committee held a conference on the extension of British trade, at which the introductory address was delivered by Prof. H. E. Armstrong. This characteristically practical and outspoken utterance has just been reprinted. Prof. Armstrong's proposals were: that we revise our entire

educational system, and insist that it be made to fit the needs of life; that we take stock of our coal; that the ultra-conservatism of the agricultural community be overcome and rendered to some extent open-minded and progressive. With reference to the first proposal, it is advised that all but absolutely necessary examinations should be abolished, that scholarships should only be given to those who can make proper use of them, that the professor of education should be eliminated from our system, that teachers should be brought far more into touch with practice. Under this latter head Prof. Armstrong suggests that, at intervals of five years or so, teachers should take some other post in a bank, a factory, or a business office, so that "their teaching might be turned into wise directions and suited to this earth." Inspectors and education officials should be treated in similar fashion, and teachers and officials might interchange duties.

MR. GEORGE FLETCHER, assistant-secretary for technical instruction in Ireland, delivered a lecture on "Ireland's Industrial Opportunities" to the Insurance Institute of Ireland, in which he directed particular attention to the mistaken notion that Ireland is predominantly agricultural. While admitting that Ireland is unsuited to large factory industries, Mr. Fletcher points out that there is great scope for small factory industries organised upon entirely modern lines in regard to power and equipment. He shows that the woollen export has been doubled since 1904, that extensive development has occurred in connection with the production of aluminium. As an illustration of the work of the Technical Instruction Department, it is stated that the Department stimulated the establishment of schools of machine embroidery in which the worker, operating with hand and foot, and no other motive power, can embroider 234 handkerchiefs simultaneously; and consequently so many machines are in use that much less linen is being sent abroad to be embroidered. Mr. Fletcher urges that the present crisis is a fitting time for the display of greater energy in the establishment of industries suited to Ireland.

A NEW agreement has been entered into between Columbia University and Teachers College. The old agreement did not take into account the important relation which Teachers College has come to bear to the recently established work of the summer session and extension teaching, both of which have grown to enormous proportions. The new agreement covers these points, and fixes the position of Teachers College in the educational system of Columbia University while preserving its corporate and financial independence. The faculties of education and of practical arts, both of which are maintained by the trustees of Teachers College, will now stand in precisely the same relation to the University Council and to the educational work of the University as do the faculties of law, medicine, and applied science. The summer session will be conducted as an undertaking representing the whole University, including Teachers College, under the direction of an administrative board whose executive officer is the director of the summer session. The new agreement is approved by all concerned as providing for complete educational unity, while preserving

both for the University and for Teachers College the interest and enthusiastic service of the trustees of Teachers College.

Science Progress for July contains two new features, namely, essay reviews and brief statements as to recent advances in eight of the sciences. We doubt the wisdom of these departures, as the lengthy and critical article by the expert on his particular subject was the valuable feature of the journal in its early days. Few of the articles in this number are of general interest. Mr. A. G. Thacker discusses some eugenic aspects of war, and is opposed to the pessimistic conclusion that the racial properties of the population of Europe are being injured. In a note on the spinning of cotton, Mr. W. L. Balls claims that strong hairs are undesirable in lint, and suggests that a machine should be devised to remove them just as the comb removes short hairs. Pure-strain lint gives the strongest yarn, since yarn strength is a function of the total hair surface per unit weight of cellulose.

IN the review of "The Acharnians of Aristophanes," on p. 273 of our July issue, it was incorrectly stated that the book was published by the Cambridge University Press. The volume is issued by Mr. Humphrey Milford for the Oxford University Press.

SCOTTISH.

COURT, Senate, and General Council of Edinburgh University have agreed upon the terms of a draft ordinance for instituting a degree in the theory, history, and practice of education. It has been felt for a long time that the Scottish universities were neglecting the interests of the teaching profession from which the arts faculty draws most of its members. In Edinburgh and St. Andrews chairs of education have been founded by private benefactors, but in Glasgow and Aberdeen the importance of the teaching profession does not, in the eyes of the university authorities, call for more than a humble lectureship in the subject. The various organisations of teachers have repeatedly asked for the institution of a faculty of education on the lines of that existing in the case of law, medicine, and divinity. Until that is done it is idle to talk of teaching as a profession in the sense that law and medicine are professions. It is to be hoped that teachers will not allow themselves to be fobbed off with the makeshift proposals of Glasgow and Aberdeen University authorities. These bodies have satisfied themselves that teachers' demands will be fully met by the institution of an honours degree in education and philosophy, but teachers, through their representatives, have refused to accept this even as an instalment of their demands, and it is hoped that the approaching general meetings of the various associations of teachers will emphatically endorse this view.

THE report for the year 1913-14 of the Director of Studies of the Glasgow Provincial Committee for the training of teachers shows that the number of students in training was 1,117, being 101 more than the previous year. Of these 249 are men and 868 women.

It is satisfactory to find that the connection of the teaching profession with the university is being maintained, 340, or nearly a third of the total enrolments, being graduates or undergraduates. As in other educational institutions, the work of the year had been gravely affected by the war. Eight of the lecturers and about one hundred students were serving with the colours, while many others were employed in munition factories.

THE Secretary for Scotland, in reply to a question in the House of Commons by Sir Henry Craik, stated that the case of students or teachers who, by reason of having taken up military duty, were prevented from sitting for the certificate examination, would be sympathetically considered and their period of training shortened. He also indicated that partial disablement incurred in military service would not be regarded as a disqualification for recognition as a certificated teacher. At the close of the war the nation will demand the most liberal interpretation of these promises, and will not tolerate anyone who has given imperial service at this time being placed in a worse position than the shirkers who have remained at home.

THE Scotch Education Department has issued a memorandum outlining a course of specialised instruction for boys in supplementary classes of schools in mining districts. Similar schemes have already been issued for pupils in agricultural and fishing areas. The memorandum, while laying down the course of study in considerable detail, gives ample latitude to teachers as to the amount and precise order of what they will attempt. In every case, however, actual experimental work on the part of the pupils themselves will be required.

THE Teachers' Register of workers for war service during the holidays has proved a great success. More than 6,200 have offered themselves for work of various kinds. So far it cannot be said that there is a great demand for their services. Employers naturally object to training individuals for special work when in the nature of things they must return to their regular employment just when they are beginning to be of use. The formation of a National Register seems to offer an ideal opportunity for utilising the willing labour of these devoted teachers. Already the War Service Committee of Teachers has issued a circular to town and county councils, putting at their disposal practically this whole army of voluntary workers for the preparation of the Register. Glasgow Corporation has agreed to take advantage of the offer, and has already called for one hundred volunteers.

THE governors of Heriot-Watt College, Edinburgh, have resolved to institute classes to prepare men for the making of munitions. They wish in the first place to get men with some mechanical training, but there will also be a class for lads leaving school and looking forward to an engineering career. The training will be given at the college workshops, but should these not be sufficient, the workshops of Tyncastle Supplementary School and the Technical College,

Leith, have been freely placed at the disposal of the governors. Principal Laurie is taking a keen personal interest in the scheme, and the staff of lecturers have offered to give up their holidays in order to help in the work of training what may be called apprentice munition-workers.

THE Education Department is to be congratulated on the expedition with which it has issued the leaving certificate results this year. Although the office staff has been reduced by more than 30 per cent. by reason of war service, the results are to hand quite two months earlier than last year. We will not inquire too curiously how it has been done, but offer our hearty congratulations to the Department on their achievement. It must be granted also that the examiners seem to have fully redeemed their promise to take into account the handicap schools laboured under owing to the war. We shall be very much surprised if the average pass for the whole country is not quite up to that of previous years.

IRISH.

THE rules and schedule containing the programme of examinations of the Intermediate Education Board for 1916 were published towards the end of June. They contain some striking new features. Two years ago the Board introduced a commercial course as a new subject; this year it continues the "modernising" of its syllabus by adding two new subjects: (1) applied mathematics for middle and senior grades, both for pass and honours; and (2) manual instruction and practical mathematics for junior and middle grades. To pass in the latter a student must obtain 30 per cent. of the marks allotted to the examination paper in practical mathematics, and also have followed the prescribed course in manual instruction in an Intermediate school to the satisfaction of the Board's inspector. The applied mathematics consists of a course of dynamics and statics.

THE conditions of passing the Intermediate examinations have been radically modified. Speaking generally, no second mathematical subject and no second language will for 1916 be required for a pass. The essential subjects are: (a) English; (b) arithmetic with algebra; (c) one language other than English; and (d) for boys, three other subjects, and, for girls, two other subjects, except when the language taken under (c) is Latin or Greek, in which case only two other subjects are required for boys and one for girls, but the subjects taken under (d) must not include book-keeping, or shorthand, or music, or more than one science subject.

THE Board also does away with the October school roll, modifies the arrangements for keeping the attendance book, simplifies the conditions as to the mode of applying exhibitions, and reintroduces the proposals for granting a bonus in addition to the normal school grant. With regard to the inspection grant paid upon pupils between twelve and fourteen, schools are to be divided into three classes: (a) those which reach the normal standard; (b) those which do not reach the normal

standard; and (c) those unworthy of classification. The grant under (a) will be 20 per cent. more than under (b), while schools coming under (c) will receive no inspection grant at all.

IN the syllabus of examination the most important point to notice is that the Board no longer prescribes Thackeray, Dickens, and Scott for private reading, but requires the schools to submit a course for general private reading which the Board is to approve. The courses in arithmetic and algebra are extended in all three grades, especially in the junior; in the middle grade the history course is from 1603 to 1748, not 1760, and the senior grade course is lengthened in proportion, and for modern literature in the senior grade in French and German, instead of a period the life and works of two famous writers are prescribed, viz., Victor Hugo and Goethe (to 1805).

THE Roman Catholic hierarchy meeting at Maynooth towards the end of June uttered an emphatic protest against the proposed new Registration Council as being too predominantly Protestant, although three-quarters of the teachers and three-quarters of the pupils are Catholic. The protest concludes with these words:—"For our part, the composition of the council indicates that we may be forced to consider whether we shall not direct the schools under our control to hold altogether aloof from this scheme of registration."

TRINITY COLLEGE, Dublin, announces that a special entrance examination and a special preliminary examination in arts for intending medical students will be held on October 1st, 2nd, 4th, and 5th. Students who desire to join the medical school in the coming session should pass these examinations, unless they have already obtained credit for the entrance, and a junior freshman term examination. Candidates who have only passed the entrance examination should present themselves for the special preliminary examination in arts, where they will be given opportunities for answering in the set books of either the Hilary or Michaelmas junior freshman term examinations.

WELSH.

THERE are interesting changes in progress in many Welsh Intermediate schools; opportunities are being provided for vocational instruction of many kinds; Aberdare is to have an engineering laboratory; Porth has had one for some time; at Pontypridd one is approaching completion. To give an idea of the provision made, it may be mentioned that in the school last named there is being installed a Babcock and Wilcox water-tube boiler, supplying a vertical engine of 12 h.p., a Crossley horizontal gas engine directly coupled to a 3-kw. compound open-type dynamo running at 360 revolutions, with rotary converter to work off the town mains. The gas engine is supplied from a suction gas plant (Crossley), and is adapted to burn coal gas when required; a model mine gallery, with a fan to produce air currents; compressor, centrifugal pump, demonstration apparatus, and lathes and other tools for mechanical and electrical engineering.

Moreover, agricultural instruction is urgently called for in the schools of several counties, and is likely to receive increased attention at the hands of the Central Board.

THIS idea of technical and vocational upper parts to the schools is excellent, if only care be taken to prevent too early specialisation, a matter in which it will be necessary to stand out against the wishes of many parents, especially working-class parents, who are used to the idea of early preparation for wage-earning, and of business men who want cheap office-boys and errand-boys. If the proposal to abolish the junior examination had the effect of causing a purely "secondary" and liberal education to continue up to matriculation standard, it would not be an unmixed evil.

If the proposal is carried into effect, and the only examination that matters, except for internal school purposes, is to be at the top of the school—a leaving examination—the creation of departments within the school, each with its responsible head, will become increasingly necessary; and with responsibility will have to come authority over books, methods, and syllabus. At present a senior teacher may draw up a plan of work without any means of seeing that it is followed; but if he is to be responsible for the results at the top, he will need to have control of the work in the lower classes.

THE council of University College, Cardiff, has filled the places left vacant by the resignation of Mr. and Mrs. Mackenzie. The new professor of philosophy is Mr. H. J. Hetherington, an old scholar of Dollar Institution and of Glasgow University, where he had a brilliant career, holding the Ewing fellowship and the G. A. Clark scholarship. As a graduate Mr. Hetherington held the Ferguson scholarship in philosophy. He is only twenty-seven years of age. Miss Barbara Foxley, of Aberdare Hall, Cardiff, has been appointed to succeed Prof. Millicent Mackenzie in the chair of education and the headship of the women teachers' training department. Miss Foxley has had much experience as a teacher, including the headships of the Dewsbury and Walsall High Schools for girls.

THE difficulties of the eternal question of finance are accentuated by the war. Both schools and teachers are "hard up"; school after school has overdrawn at the bank; some authorities give their teachers a war bonus; in one county the certificated teachers get £10; Glamorgan travelling teachers get £10 if married, £5 if not, provided their salary is less than £200. Education authorities seem to be unable to grasp the fact that unless one can get up to at least £250—a figure reached by only one assistant in Wales—it is a positive disadvantage to rise above £160—no insurance, unless one pays one's own premiums at the ordinary rate; income-tax, already increased, and soon to be increased still further; no increases of salary to meet either the increased cost of living before the war or that incidental to the war; plentiful lectures on the duty of sacrifice. In one case a school governor said

that "as poor people in the town would have difficulty in paying their rates he could see no case for raising salaries" (as a matter of fact, the school expenditure would not affect the rates of the town; the county council makes a fixed precept on the U.D.C. on which he sits, and which has declined to exercise its rating powers for secondary purposes under the Act of 1902). A few days ago the South Wales miners went on strike in order to make their present wages the minimum for the future; there are thousands of them getting more than any assistant-teacher in the Principality, and their average is higher than the average of the teachers.

THREE WAR-BOOKS FOR CHILDREN

- (1) *The Children's Story of the War*. Vol. i. By Sir Edward Parratt. 320 pp. (Nelson.) 2s. 6d. net.
- (2) *The Great War and What it Means for Europe*. By Muriel O. Davis. viii+108 pp. (Clarendon Press.) 1s. 6d.
- (3) *Heroes and Heroic Deeds of the Great War*. By Donald A. Mackenzie. 192 pp. (Blackie.) 1s. net.

It is doubtful how far children are able to understand the meaning and significance of the present war, and it is still more questionable whether it is a good thing to introduce the minds of children to scenes of blood. If, however, children demand information, and it is considered necessary to supply it, these three books serve a purpose.

(1) Sir Edward Parratt's work contains the first part of a narrative of the great struggle which, if carried through on the same scale, will run to many volumes. For it traces the story of the war only in its western theatre, and even there only as far as the landing of the British troops in Belgium on August 18th, 1914. It deals, however, incidentally with many of the antecedents of the war, e.g., with the rise of Prussia, with the career of Napoleon, and the heritage of discord which it left in Europe, and with the process of the unification of Germany in the nineteenth century. It is fully illustrated, but the illustrations have not in all cases any close connection with the text.

(2) Miss Muriel Davis's little book can be commended cordially as a statement of the causes of the war and of the issues at stake, brought as nearly as possible into a form capable of assimilation by children in the upper classes of secondary and elementary schools. It is based on the excellent Oxford pamphlets of which Miss Davis's brother is editor, and it summarises in a valuable manner their main arguments and conclusions. Its only illustrations are half a dozen outline maps necessary to the elucidation of the narrative.

(3) Mr. Mackenzie's book appeals frankly to a boy's love of victorious warriors and adventurous deeds. The heroes depicted include Kitchener and Jellicoe, French and Joffre. The heroic deeds described are those of the flying-men who have fought battles in the air, the seamen who have destroyed the ocean-raiders of the Germans, and the soldiers who have held the line of the west. Of the fourteen chapters in the book twelve deal with the subjects of King George, the remaining two with subjects of the French Republic. Thus Russian, Belgian, and Serbian men and deeds come in for no more than passing references, while Germans, Austrians, and Turks are merely the *corpus vile* upon which heroism is manifested.

EDITED ENGLISH TEXTS.

(1) *The Compleat Angler*. Edited by A. B. Gough and T. Balston. 398 pp. (The Clarendon Press.) 3s.

(2) *Wordsworth. The 1807 poems in two volumes*. Edited by H. Darbishire. 470 pp. (The Clarendon Press.) 4s. 6d.

(3) *Beowulf and the Finnsburg Fragment*. Edited by A. J. Wyatt; new edition by R. W. Chambers. 254 pp. (Cambridge University Press.) 9s. net.

(4) *Chaucer: The Nonne Prestes Tale*. Edited by L. Winstanley. 130 pp. (Cambridge University Press.) 2s.

(5) *Short English Poems for Repetition*. By C. M. Rice. xv+64 pp. (phonetic text), +53 pp. (ordinary text). (Cambridge: Heffer.) 1s. 3d.; phonetic text only, 10d.

(1) THE old-world look of this famous book is preserved on every page, and nothing better has been produced since Mr. Stock gave us his facsimile. A biography doing justice to old Izaak is followed by the title-page of the fifth edition, 1676, and the full text and a few necessary notes make up the volume. But the chief charm lies in the look and feel of the volume, and if the edges were only bevelled it would be a most comfortable addition to any shelf. It is not in the least like a school-book; and this is praise.

(2) Here again we have the old-world book, type and all. It is needless to say that, as in the rest of these brilliant and learned reprints, the student has everything at his command: an introduction from critic-devotee, text with variations, the fullest notes, and even a few pages on metre. Wordsworth will continue to be a fighting-ground, but this is mainly because devotees will admit of no criticism but their own. If we divide Wordsworth into the person who was there and the person who wasn't (he says himself again and again that he had to take hold of things to prove that he was real), the difficulty with this most difficult poet is lessened. The person who was there was passionate, self-centred, idle, not averse to money-taking (in the usual poetical form of gift, legacy, due or kind debt), suspicious of man, ultra-Philistine in art, unable to see the difference between good and bad verse (let alone poetry), manly, athletic, stubbornly English, affectionate; the person who was not there was more ethereal than Shelley, a natural force, word-music, a pin-point of heat and light under a burning-glass exposed to all the powers that continually seek and now and then find their home in man. The two persons are more easily separable in Wordsworth than in Shelley or Thompson or even William Sharp; in Shakespeare the former person is entirely missing. We naturally turn to the Ode and to the very full notes; since Miss Darbishire consents to call the Ode a centre, perhaps Wordsworthians do not care that it is daily proved false from start to finish in the lives not only of poets but of ordinary men. It is men, not children, who see the gleam and follow; men, not children, who feel the anamnesis, and the consequent glory, the freshness and the superb call of life. The editor tells us that the Prelude is the best comment on the Ode; but who is to trust the Prelude, except as a man's ripe realisation of what never was in earlier days? All this may be said without detracting from any worship of the Ode by any devotee. The 1807 book is done here once for all.

(3) It is a rare thing for an editor to allow someone else to revise his work, and continue it; but this is what Mr. Wyatt has done, even helping the present editor with advice and lending the material set aside for himself. Notwithstanding all the work on Beowulf,

the studies of the present editors are new; it is the text rather than the meaning that is dealt with. Interesting facsimiles are given, and we are promised an introduction to the study of Beowulf. Perhaps to all except enthusiastic students a real attempt to bring the poem home would be as welcome as anything; few people honestly admire any but the purple passages. This is probably due to the refusal of translators to give up the rhythm, which tends in modern English to become monotonously dactylic, and psalm-rhythm has rarely been tried for Old English verse. The edition will supply students with a good deal that they need by way of the elucidation of "historical" difficulties; the glossary is easy to understand and the printing admirable. With Mr. Clark Hall's prefaces to his edition and with the Riverside translation, we can certainly "wait nine years" for another Beowulf.

(4) This is an excellent introduction to Chaucer; the prefatory work being remarkably full, and failing only in the item in which all school Chaucers fail, i.e. (as we have again and again insisted) in the insufficient attention paid to the sounding or the non-sounding of the final *e* at the end of the verse. All editors consider the question important and all shirk it. Probably Miss Winstanley lays too much stress on the influence of Renard le Contrefait upon the poet; for the tale was a European commonplace. But the full notes on Chaucer's learning, his humour, his genius, leave nothing to be desired, and the text (the Ellesmere) is refreshing after the usual standardisations. Chaucer's attitude to the two extremes, the aristocrats and the poor, is well drawn out; but his most curious and almost complete silence on the Black Death and the 1381 Revolt is rather lightly touched on. Notes and a brief glossary are given, and the book is pocketable.

(5) We gladly welcome the enterprise of Messrs. Noel-Armfield and Rice, the joint editors of Heffer's Phonetic Series, and of their publishers, in issuing English texts in phonetic transcription at a reasonable price. This, the most recent addition to the series, is a selection of seventy-seven short poems, none of them by living authors. It is a very personal selection, and one might wish that some of the poems had been excluded in favour of present-day verse. It is, however, from the phonetic rather than the poetic standpoint that the book must be judged; and then there is little fault to find. Mr. Rice has tried to reproduce exactly his own pronunciation, and that always has scientific value; but he should have told us a little more of the history of his speech than that he spent his childhood chiefly in Dublin. A very brief phonetic introduction contains some useful hints, and, incidentally, some remarks about baby-speech which are not in the least in accordance with the facts; they are views held and expressed by the reviewer until observation of babies showed them to be quite wrong. The transcription, as a rule, represents standard speech carefully and conscientiously; but it is well to add much fuller notes than are here supplied, otherwise the learner may get the idea that there is more uniformity in educated speech than is actually the case, and that certain perfectly legitimate variants are to be avoided. The treatment of unstressed syllables is often a little surprising; and the use of "ü" to represent a sound between "u" and "ö" is unfortunate, because the symbol is needed for the "u" uttered with tongue advanced, an increasingly common sound in southern speech. Mr. Rice does not seem to have made up his mind about the pronunciation of the vowel in "poor," the final vowel in "yellow, sorrow," etc., the quantity of the vowel in "soft, lost," etc. He writes "planned, back" with

long "e." Actual misprints are not common; we have noticed slips on p. 2, l. 13 and l. 22; p. 3, l. 6; p. 14, l. 5 (surely this should be "boniva:") and l. 15; p. 28, l. 7; p. 34, l. 9, or p. 35, l. 7; p. 35, l. 19, or p. 36, l. 3; p. 40, l. 1 (or p. 18, l. 10); p. 41, l. 16; p. 42, l. 5; p. 50, l. 17; p. 56, l. 8 and l. 11. In the first three lines of the second stanza of Christina Rossetti's lovely poem, "When I am dead," the stress is surely on the first word, not on the second. The criticisms we have made must not be allowed to obscure the fact that this is a valuable contribution to phonetic literature.

ANCIENT HISTORY.

(1) *Ancient India, from the Earliest Times to the First Century A.D.* By E. J. Rapson. vi+199 pp. (Cambridge University Press.) 3s. net.

(2) *Outlines of Ancient History, from the Earliest Times to the Fall of the Roman Empire in the West, A.D. 476.* By Harold Mattingly. xi+482 pp. (Cambridge University Press.) 10s. 6d. net.

(1) FOR those who, like ourselves, have no particular knowledge of Ancient India and yet are interested in ancient civilisation generally, nothing could be better than this delightful little volume. It has six excellent illustrations (with full description of them in an appendix) together with two maps, and is written in a most lucid and interesting fashion. Prof. Rapson says that he has tried to write "in a manner which shall be intelligible to all who take an interest in modern India." He has certainly succeeded. We conjecture that his book will have a threefold appeal—to the reader interested in modern India for such remarks as "Thus, in all periods of history, local governments have gone on almost unchanged in spite of conquest after conquest" (p. 96); or, "the maintenance of peace, and of those conditions which are essential to progress, depends in India on the existence of a strong imperial power" (p. 113); to the classical student the book will appeal by its description of the use of the bilingual coins (struck by the Greek Bactrian princes) in the decipherment of the lost Indian alphabets, by the confirmation of Herodotus provided by the historical inscriptions of Darius, and by the explanation of the lack of traces in the literature or institutions of India left by the conquests of Alexander the Great in the fact that "war was a special department of government in which the common people had no share" (p. 97); while the general reader cannot fail to be interested in the succinct account of the Vedas and in the distinctions between Brahmanism on one hand and Jainism and Buddhism on the other.

(2) It is a difficult task to write an outline history so comprehensive in its scope as this. The first thing to decide is for whom the book is intended. We are told simply that this is "one of a series of three outline histories projected by the Syndics of the Cambridge University Press." If a schoolbook it is hopeless; the narrative is far too detailed and dull. On the whole we are inclined to think that Mr. Mattingly has omitted to decide for whom he is writing; but the general impression of the book is that it is intended for moderately advanced students. In that case the language generally is somewhat naive, and the same may be said of many definite statements, as, for example, that the teaching of the great Sophists—Mr. Mattingly expressly mentions Protagoras, Gorgias, Prodicus, and Hippias—"rested on a rotten foundation" (p. 136). Surely none but schoolboys need to be told that Cicero "was a brilliant orator and a many-sided and able man. We shall

hear much of him later, when events had led him to alter his political attitude" (p. 324). There is some attempt to trace tendencies, and occasionally the narrative gets its wealth of detail well marshalled, as in the account of the career of Sulla and the politics of the time of Cicero, but as a rule Mr. Mattingly seems a rather pedestrian chronicler. There are several good illustrations, clear sketch maps (on thin paper), five plates of coins, and an explanatory appendix.

PRACTICAL CHEMISTRY.

(1) *A First Course in Practical Chemistry for Rural Secondary Schools.* By W. Aldridge. 122 pp. (Bell.) 1s. 6d.

(2) *A General Chemistry Laboratory Manual.* By J. C. Blake. 166 pp. (interleaved). (New York: The Macmillan Co.) 8s. net.

(3) *Volumetric Analysis.* By A. J. Berry. 137 pp. (Cambridge University Press.) 4s. 6d. net.

(4) *Practical Physical Chemistry.* By J. B. Firth. 178 pp. (Methuen.) 2s. 6d.

(1) THE author of this well-thought-out manual tells us that he has been experimenting for seventeen years with the problem of education in rural areas. The present work is the result, in so far as chemistry is concerned. His object is not to teach the technology of agricultural chemistry—that would be outside the compass of the secondary school—but to teach the boy the elements of chemistry by using the rural phenomena which are familiar to him. The idea is carried out excellently. In the main, of course, the work does not depart overmuch from familiar lines, for the pupil deals with solvents, water, air, oxygen, and in fact all the commoner elements and their chief compounds, he learns to weigh and to observe, to draw conclusions, to be neat and deft. But the material presented to him is specialised. He handles kainit, where the town boy would use, say, potassium chloride. He performs many simple quantitative experiments with soil. He sees why certain manures are necessary and finds out how to test them. It would be impossible for him to think that his chemistry was in any way detached from his everyday life. A brief introduction to "biological chemistry" concludes the course, and deals with respiration in plants and animals, digestion, and fermentation. The book is clearly printed and well got up, and should be very welcome in those schools to which it specifically appeals.

(2) Dr. Blake's treatise is supplementary to his "General Chemistry, Theoretical and Applied," and is written as a companion volume. The numbering of the sections, for example, corresponds with that in the theoretical text-book, and consequently it is somewhat difficult to judge the book on its own merits. An introductory section deals with experiments with hydrogen and the acid-forming elements, together with the determination of molecular and atomic weight. Then follows a treatment of the base-forming elements or metals, and finally the applied chemistry of the atmosphere, water, soil, iron fuel, and oils. The book is of a type entirely foreign to English ideas, and some of the expressions are decidedly quaint; for instance, "oral and written quizzes," "slop-jar," "various ambiguous elements," "never look into the mouth of a loaded test-tube," "liquid bromine instantly cooks the flesh." The book, in conjunction with its fellow-volume, should prove useful for the student of chemical engineering, for whom it is apparently intended.

(3) The latest volume of the "Cambridge Physical Series" appears to be somewhat uncalled for. In view of the excellent standard manuals on volumetric analysis, and, in fact, the sections on this branch of practical chemistry to be found in several standard works, there appears to be little need of a *réchauffé* such as Mr. Berry has prepared. However, those who prefer to buy their text-books in instalments will find this volume very useful. It includes the usual determinations included in an honours course, and possesses two excellent chapters, one on the theory of indicators, and the other on some applications of volumetric methods. The book is beautifully printed and "got-up."

(4) Mr. Firth and his publishers are to be congratulated on having produced a cheap and trustworthy handbook for the student of physical chemistry. Whilst the scheme of work follows the usual practice of the physical chemical laboratory, and does not introduce much that is novel, yet it is thoroughly sound and logical. The measurements included comprise the determination of density, viscosity, surface tension, solubility, molecular weights, transition points, refractivity, optical rotatory power, heat of combustion, conductivity, transport numbers, electromotive force, and velocity of reaction. A good feature is the attention paid to spectrum analysis. The book is excellent value for its price.

INDUCTIVE STUDIES OF ENGLISH HISTORY.

The Inductive English History: Book I., England before the Normans. By F. G. Snowball and T. H. Bowtell. 216 pp. (Harrap.) 1s. 6d. Accompanied by a Teacher's Handbook, 64 pp., 1s. net.

EVERY new departure in the teaching of history deserves careful attention on the part of educationists, and "The Inductive English History," which is planned to extend to eight volumes, seems likely to be unusually interesting and important. It is based on the principles enunciated by Mr. Keatinge in his "Studies in the Teaching of History," viz., that the value of history lies largely in the method of its acquisition; that it is not *what* is learned but rather *how* it is learned that is important. The authors of the present work, however, do not depend so exclusively as Mr. Keatinge does upon documents. They include among their most authoritative sources relics of antiquity, architecture, and other remains, of which they provide a large number of excellent illustrations.

"The Inductive English History" contains no consecutive narrative at all. It consists of extracts from original sources (always, of course, in English, and abbreviated where necessary), and of descriptions and illustrations of historical monuments and memorials of all sorts. These raw materials of history are followed by sets of questions and exercises which are intended to enable the pupil under the guidance of the teacher to extract the information contained in the sources under review. When this task has been accomplished the pupil is expected to work up the result into a consecutive narrative in his notebook.

It would be easy for a teacher addicted to the ordinary text-book method of instruction to raise objections to this new method. He might, for example, point out that the solid information contained in the 200 pages of this book would be compressed by the professional historian into about ten pages of his summary. He might urge that the evidence supplied in the scanty excerpts here given

needs to be supplemented and corrected by immense masses that are not given or referred to. He might calculate (as indeed the authors admit) that the period of school life is altogether too short to allow of the whole outline of English history to be studied in this way. But it would be wrong to press adverse criticism at the present stage. It is the reviewer's business rather to express the hope that a sufficient number of enthusiastic pioneers may be found to give this interesting experiment a fair trial.

MAPS, ATLASES, AND PICTURES.

(1) *The Oxford Wall Maps. A Map of the Western War Area, from the Seine to the Rhine, and from the Swiss Frontier to the Rhine Delta.* 60×60 in. 8 miles=1 in., with contour lines and layered colouring. (The Clarendon Press.)

(2) *An Atlas of Economic Geography.* By J. G. Bartholomew and Prof. L. W. Lyde. (Oxford University Press.) 5s. net.

(3) *Political War Map of South Central Europe.* Scale, 43 miles=1 in. (Bacon.) 6d.

(4) *Philip's Handy Volume Atlas of the World, with War Supplement.* 74 maps. Index, 114 pp. (Philip.) 2s. 6d. net.

(5) *Bell's Geographical Pictures.* (Bell.) Each 2s. 6d. net.

(1) PROF. HERBERTSON, the editor of this series of maps, is to be congratulated upon this map of the war area. Nothing obtrudes itself from the general harmony, which cannot but please the geographer. The layered colours blend so that the map has almost the effect of a relief model; the contour intervals, 100 metres up to 1,200 metres, lend themselves in this case and on this scale (1:500,000) to the gentle gradation of colour which gives the impression of continuity of slope. There are many names which are only intended for use by the individual reader, and their style and colour blends into the general colour scheme in shades of brown, so that the result of the multiplicity of names is that the map is improved in colour tone. There is an edition without names at lower prices, which we have not seen, but it can scarcely improve upon the map before us. The named edition includes the names of towns and fortresses, the railways and political boundaries. Roads might have been added, but their inclusion would have detracted, probably, from the value of the map as a whole. The drainage is worked out in great detail, and the towns are classified into six groups on a basis of population, so that the careful map reader may realise the manner in which the population is grouped. The map is published in three styles: unmounted, three sheets, 12s. 6d.; mounted, in sections, 15s.; mounted, on rollers, 17s. 6d. net.

(2) This is an enlargement of the "School Economic Atlas" issued in a revised edition in 1912. The pages of maps have been increased from 64 to 96, and the introduction by Prof. Lyde has grown from 9 to 62 pages. The additions make the volume a combined atlas and text-book, for Prof. Lyde contrives to pack an astonishing amount of information into the introduction, which is illumined by such characteristic gems as the output of Lancashire is "100 miles of yarn from 1 lb. of cotton," "cotton (in the United States) is the 'cash' crop, with an area as large as England and Wales, and a value of £150,000,000"; "the distribution of precious stones is markedly regional."

(3) This map includes Warsaw, Greece, Budapest, and Sebastopol; it is clear and easily read, and contains that desideratum of the general public—many

names. The several States are shown by different colours, and the minor political divisions of Hungary are indicated. Main railway lines are also shown.

(4) The fact that this atlas has now reached its eleventh edition is a sufficient measure of its usefulness. The maps are politically coloured, and a considerable amount of valuable statistical information is printed on the back of each map. Maps of the eastern and western theatres of war have been added inside the cover of the atlas.

(5) These six pictures, by Miss M. D. Hardy, should be extremely useful for the preliminary stages in teaching geography. On the several sheets elephants are shown at work manipulating baulks of timber; asses are being loaded with freshly-cut bunches of bananas at the edge of the banana grove; American Indians are camped on the prairie; Eskimo are loading their sledges and harnessing their dog teams in the icy waste; an oasis in the hot desert teems with the many-sided life which is developed when a caravan is encamped, and a cherry garden in Japan typifies one aspect of life in those distant islands. The human note is strikingly and typically manifested in each picture.

NATIONAL PROBLEMS AND THE WAR.

(1) *Peace and War in Europe.* By Gilbert Slater. 122 pp. (Constable.) 2s. 6d. net.

(2) *Nationality and the War.* By Arnold J. Toynbee. x+522 pp. (Dent.) 7s. 6d. net.

(3) *Political Thought in England from Herbert Spencer to the Present Day.* By Ernest Barker. 256 pp. (Home University Library.) (Williams and Norgate.) 1s. net.

(4) *Select Treaties and Documents to illustrate the Development of the Modern European State System.* By R. B. Mowat. lxiii+127 pp. (Oxford University Press.) 1s. 6d. net.

(1) THE Principal of Ruskin College, Oxford, has produced a book upon the war and its problems which well deserves careful consideration. It is much more moderate in its expression of opinion than one would have expected. The theories of Norman Angell (p. 21) and the proposals of the Union of Democratic Control (p. 112) are alike subjected to damaging criticism. First the causes of war in general, and of this war in particular, are analysed under the four heads, economic, religious, national, and sociological. Under the head of religion Dr. Slater describes the doctrines of Odinism which he contends is still, as it has been from primitive times, the faith of Germany. Secondly, the terms of the peace which is likely to be concluded, according as Germany or the Allies emerge victorious, are discussed with eminent sanity. Finally, the problem of the future maintenance of peace is considered. Dr. Slater favours the removal of munition-making from private hands, the exemption of private property at sea from capture under all conditions, and the setting up of an International Court of Honour.

(2) This is without doubt one of the most interesting and important books which the present conflict has called forth. As a study in the historical geography of Europe and the Near East it is masterly and of permanent value. As a survey of the national and economic problems which will have to be faced when the war is over, and peace negotiations begin, it would be difficult to overestimate its worth. It recognises the fact that nationality is the dominant factor in present-day politics, and contends that until national aspirations are

satisfied no permanent peace is possible to Europe. It then proceeds to discuss, one by one, with the aid of a series of excellent coloured maps, the principal existing national problems that demand solution. Prominent among these are the problems of Alsace-Lorraine, Schleswig, and Posen in the German Empire; of Hungary, Croatia, Bohemia, and the Trentino in the Hapsburg monarchy; of Thrace, Armenia, Anatolia, and Arabia in the Turkish dominions; of Poland, Finland, Lithuania, and the Lettish provinces under Russian sovereignty; and, finally, of Persia and Afghanistan in their threatened disruption. The general aim of the book is to further the cause of a rational and equitable re-settlement of Europe which shall obviate as far as possible future international conflicts. No statesman or student of political affairs can afford to neglect the reading of this notable volume.

(3) This is a remarkable book, the value of which cannot in the least be gauged by either its moderate size or its modest price. It surveys in a masterly manner English political thought from 1848 to 1915, tracing it from the stern individualism of Herbert Spencer down to the various types of socialism and syndicalism prevalent to-day. The scope of Mr. Barker's sketch is extraordinarily wide. Not only does he deal with professedly political and sociological writings; he also examines the theories which are embedded in the literary works of such men as Carlyle, Ruskin, and Matthew Arnold. Particularly interesting are his criticisms of the ideas of men who are still living and influential, e.g., Mr. Norman Angell, Mr. Graham Wallas, Mr. H. G. Wells, and Mr. Hilaire Belloc. This is a book which every thoughtful student of present-day affairs should buy, should pore over, and should make in every sense of the term his own.

(4) Mr. Mowat has collected in this small volume, which is uniform in appearance with the Oxford Pamphlets, extracts from some fifty diplomatic documents of the nineteenth century bearing upon the antecedents of the present war. They are particularly valuable to the student and teacher of history, for they give him the text of many treaties and agreements, the maintenance of which is now at issue. He will find here, for example, the authorities for the neutrality of Belgium and Luxemburg, and the diplomatic origins of the Triple Alliance and Triple Entente.

RECENT SCHOOL BOOKS AND APPARATUS.

Modern Languages.

(1) *Dumas: Vingt Ans après.* Edited by O. B. Super. v+260 pp. (Ginn.) 3s.

(2) *Balzac: La Recherche de l'Absolu.* Edited by C. E. Young. xvi+304 pp. (Oxford University Press: American Branch.) 3s. net.

It is a matter for some surprise that books like these should be edited for school use by professors of romance languages at American universities. The edition of Dumas's flashy tale of adventure contains a page and a half on Dumas, four pages of English history, and seven pages of notes to two hundred and four of text, including such information as "Tyne: a river in northern England," "plait-il?: beg your pardon," "La Cité: the oldest part of London is still called the City." There is also a vocabulary. The editorial apparatus of the Balzac novel is equally exiguous. It is true there are ten pages of introductory matter about Balzac's life and work and the

"Recherche de l'Absolu" in particular, but it is very commonplace and not too well expressed. There are nine pages of notes to two hundred and ninety-two of text, including the information that Michelangelo was a famous Italian painter and Beethoven a celebrated German composer; that Gand is a large and important city of Belgium, and that "quand même" means "even if"; that Henry VIII. was a "king of England six times married," and that Ostend is a "famous Belgian port on the North Sea near Calais." There is not much in these two books that one could not get from a shilling plain text and the little Larousse.

Erstes deutsches Lesebuch. By M. Schmidhofer. iv+176 pp. (Heath.) 2s.—According to the opening words of the preface, this book is designed for use "by those children who have to some extent mastered the reading of the English language." It may be that in some parts of the United States German is begun so early; in this country beginners in German are, as a rule, more mature. They are likely to find the reading matter very childish; it seems to have been selected from very elementary books used in German schools. There is a very large proportion of verse, more than appears at a first glance, as many poems have been printed not in metrical lines but like prose. The pictures, by Joseph Kahler, are moderately good. There are a few pages of "Sprachübungen" and some poems with music at the end of each of the two parts into which the book is divided. There is also a German-English vocabulary, running to more than two thousand words, although it does not contain the words in the songs. It will be readily seen that so large a number of words is far beyond what is desirable in an "Erstes deutsches Lesebuch." While it may be suitable for German children, and perhaps for German-Americans, it cannot be recommended for English beginners.

Aventures et Merveilles. By C. V. Calvert. viii+290 pp. (Heinemann.) 2s. 6d.—Folklore has skillfully been drawn upon by Mr. Calvert in this collection of sixteen tales, each of which has a pleasing full-page illustration. Each story is divided into sections of two to three pages, and there are ten questions to each section, as well as two English passages for re-translation based on the text. There is also a set of questions on the picture, and reform exercises on each story. Finally there is a vocabulary. The book is carefully printed in clear type, and there are very few misprints. Altogether a good, conscientious piece of work, likely to prove useful as a simple French reader for junior forms.

First Steps in German Composition. By Rev. W. H. David. 63 pp. (Oxford University Press.) 1s. 6d.—In this little book English sentences are printed on the left-hand pages and German words are supplied on the opposite pages. There are a dozen preliminary exercises for drill in various constructions. The exercises proper consist of short stories and descriptions. As an example of the help afforded we may take the first line of lesson xv.: "A boy hired a boat at the pier"; on the opposite page we find "mieten: Boot (n): an (dat): Hafendamm (m)." The book has been carefully written and printed.

Le Journal d'un Garnement. By A. S. Treves. vii+132 pp. (Bell.) 1s. net; or, with French-English vocabulary, 1s. 4d. net.—This French "bad boy's diary" makes amusing reading. The vocabulary is fairly extensive, but useful. The only tenses of the verb used are the present, perfect, and future—which has imposed rather severe restrictions on the author;

one rather wonders whether it was worth while, as it renders narratives in the past practically impossible. Most of the adventures are illustrated, and there are sets of questions on the text and on the pictures, which are quite good line drawings. There are also reform exercises which might well have been more copious. At the end of the book there are notes and explanations of words in French, which it would have been better to place at the foot of the page. The explanations are not always satisfactory, e.g. "cacher: rendre invisible," "avoir peur: trembler," "fil: corde excessivement fine employé pour assembler les vêtements, etc.," "queue: appendice postérieur d'un animal," "rivière: de l'eau qui coule." Those who desire it can obtain an edition with a French-English vocabulary, which is described as "full." We have checked it by looking up the words in p. 94, and we have failed to find "pour, solution, grand, excellente, papa, télégraphié, revoir, nouvelles, long, présence, bonne (good), paternel, absence, résolution, changer, quelque." If it is suggested that most of these are easily understood, because there are similar English words, it must be pointed out that the vocabulary contains "adopter, amuser, arriver," etc. Further, on the same page, we have the verbal forms "vais, ira, vu, veut," which do not appear in the vocabulary. "Chercher" on p. 94 means "to fetch"; "parents" means "parents"; "sage" means "good"; "sentir" means "to feel." The only meanings given in the vocabulary are "to look for, relations, wise, to smell" respectively.

Classics.

L. Annaei Senecae Dialogorum Libri x., xi., xii. Edited by J. D. Duff. lix+312 pp. (Cambridge University Press.) 4s. net.—We wonder a little for whom this latest addition to the "Pitt Press Series" is intended. The notes are full enough for sixth-form schoolboys; but who ever heard of a schoolboy reading Seneca? Still, it is better to have erred on the side of giving more than pupils are likely to require than to have left puzzling ambiguities unexplained. And really the two hundred pages of notes contain in very handy form heaps of information essential for the understanding of other authors, such as Martial, Statius, and Juvenal. In fact, notes of unusual excellence occur on almost every other page. Moreover, the long introduction is equally pleasing. Maybe there are others besides ourselves who are, or were, ignorant that Gallio, "who cared for none of these things," was Seneca's brother, and that when he had consumption he boarded ship for Egypt, "clamitans non corporis esse sed loci morbum." And Mr. Duff argues most temptingly for the identification of "Marcus" with the poet Lucan. In fact, we have rarely read a more fascinating edition of—the truth must be confessed—a more essentially boring author. The epistles which the volume contains are those *Ad Paulinum, de brevitate vitae, and Ad Polybium, and Ad Helvian Matrem, De Consolatione*. There could be no better example than Seneca of G. H. Lewes's favourite contention that sincerity is the first requisite of success in literature. Seneca's themes continually remind one of Horace and of the last chapter of the Agricola; the only difference is that one remembers Horace and Tacitus, whereas it needs an edition like this to recall one to Seneca.

English.

On the Writing of English. By G. Townsend Warner. 158 pp. (Blackie.) 3s. 6d. net.—Mr. Townsend Warner's work as an historian and as the

master of the modern side at Harrow is so favourably known that we looked forward with lively hope to his new book on the writing of English. We have not been disappointed. It is quite unlike previous work in this field, but it is very good—as good in its way as Mr. Hartog's book or as Mr. Hardress O'Grady's; and by comparing it with the work of those two authors we give the measure of its excellence. It is written colloquially, but not offensively so, and drives home essentials in a way which cannot fail to appeal to boys. Order, vocabulary, and style are all dealt with adequately, and without a trace of that loathsome aping of technique which disfigures so many text-books on the writing of English. We have one little criticism to offer; we are inclined to think—from painful experience—that the modern boy is not nearly familiar enough with the Bible to make it a touchstone of style, as Mr. Warner suggests. But the fact remains that we have here a book which boys will read not merely with great profit, but with real enjoyment.

Oral Composition. By C. C. Ward. 412 pp. (New York: The Macmillan Co.) 4s. 6d. net.—It was pointed out in a recent article in THE SCHOOL WORLD that oral composition had received far greater attention in America than in this country. The present volume amply confirms that statement. It is as technically elaborate as other similar American works. An introduction of seventeen pages shows us "Why we Should Know How to Speak," and the next hundred and thirty expound the "Conditions of Good Speaking," including an interesting chapter on actual speaking—the use of the body, the use of the voice, enunciation, and pronunciation. Another hundred and thirty pages are concerned with the "Kinds of Writing and Speaking"—a section therefore which covers more ground than we are promised by the title of the book. Part iii. contains "Topics and Illustrative Material," and here we have copious subjects for practice in speaking. Some are of a general character, but many are based upon the books set for the entrance examination of the American universities. Last of all come examples of speeches. Like most American books on the technique of teaching, the present volume is very wonderful, and it is perhaps the final proof of our chaotic professional conditions that to us the technique appears to have swallowed the teaching.

Selected Speeches on British Foreign Policy (1738 to 1914). Edited by E. R. Jones, M.P. 550 pp. The World's Classics. (Oxford University Press.) 1s.—It was an excellent idea to begin with Pitt and end with Sir Edward Grey, Mr. Asquith, and Mr. Lloyd George; it redeems from antiquity the former, and places the latter in their true place as the guardians and successors of the great patriot dead. Quite a large number of the speeches printed have a definite bearing upon the present crisis; and it is remarkable to find running through a volume like this not only a standard but a style to which all House of Commons oratory bows. The distinction of such oratory, apart from personal idiosyncrasies such as those of Mr. George and Benjamin Disraeli, stands out quite clearly; and no doubt the form of this little book will attract quite as much as the important matter.

The War Speeches of William Pitt the Younger. Selected by R. Coupland. 358 pp. (Clarendon Press.) 2s. 6d.—One cannot help thinking that this selection has been influenced by present events; and it is well that it should be so. A good deal of oratory passes with the hour, but Bright and Pitt, and sometimes Burke, remain fresh. Mr. Coupland supplies a long

introduction, and the speeches are those concerned with the three phases of the war. Each speech has a sort of running commentary that is very useful. The "Case of Treason," on p. 336, in which apathy and treason are considered synonyms, is particularly applicable, and in his quotation from Pericles and in his mottoes the editor points the moral. We have been waiting for someone to reprint in pamphlet form Wilkins' translation of the speech over the dead in the Peloponnesian War; but possibly there is no sale for the brief masterpiece. But the "Protection of London" and the folly of a separate peace touch us nearly.

English Humour in Phonetic Transcript. By G. Noël-Armfield. xv+73 pp. (Heffer.) 1s. 3d.—As yet there is an inadequate supply of English reading matter in phonetic transcript, and we therefore welcome this little book with its amusing contents carefully printed in the international way. A brief introduction gives some general hints, then comes the phonetic text with footnotes, and at the end the text appears in the ordinary spelling. The transcriptions represent good educated conversational speech, and there is little to which exception can be taken; but the annotation might with advantage have been much fuller. Thus there might have been a reference to the quantity of the vowel in "lost, off, gone," etc., to the colloquial dropping of *t* in "isn't it," to the omission of what we may call the *d* element in *-inge*, etc., to the two pronunciations of "Shrewsbury," to the frequent dropping of the middle vowel in the second part of "following." In some cases alternatives might have been mentioned which, though commonly heard, cannot be approved; on the other hand, some of those given without an expression of disapproval certainly deserve it; for instance, "including" with *ing-*, and "tragedian" with a short *i* in the second syllable. Misprints are commendably rare; we have noticed [æ] and [niklɪzɪz] on p. 19, [ju:] for [nju:] on p. 25, [mɒst(t)] on p. 31, [puəz] on p. 32, [ektɹə] on p. 33. The maid's speech in extract 22 does not seem convincing; Mr. Noël-Armfield has missed an opportunity of giving a useful exposition of what Prof. Wyld has called "modified standard." The criticisms made, however, are not intended to obscure the impression that this is a useful little book.

The Life and Death of Jason. By William Morris. Edited by E. Maxwell. 618 pp. (The Clarendon Press.) 2s. 6d.—Morris is usually spoken of, and would have wished to be spoken of, as the successor of Chaucer; but the editor very properly assigns him his place as the modern *jongleur* and writer of *gestes*. In an excellent preface Mr. Maxwell deals with the possible meaning of the myth and with Morris's inability to make it for Englishmen as virile a thing as the Argo's voyage must have been; but virility in his poetry was denied to Morris, though in his life he had abundance of it. Probably Jason will long continue to be read as narrative verse, easy, occasionally halting, and often extremely beautiful; whether it be a poem suited for schools is another matter. It is not clear where the poem is harmful; but it may well be.

Jack the Englishman. By H. L. Bedford. 160 pp. (S.P.C.K.) 1s. 6d.

Kit in Kafirland. By E. M. Green. 124 pp. (S.P.C.K.) 1s.

Colin and Joan. By A. C. Vernon. 64 pp. (S.P.C.K.) 6d.

Derek's Hero. By A. C. Vernon. 156 pp. (S.P.C.K.) 1s. 6d.

Mother Molly. By F. M. Peard. 188 pp. (Bell.) 2s. 6d.

The Master of the World. By Jules Verne. 317 pp. (Sampson Low.) 3s. 6d.

Jo's Boys. By L. M. Alcott. 358 pp. (Sampson Low.) 2s.

Every one of these books is of the character known as safe. It is too late in the day to offer praise of any of the Jo series from the pen of Miss Alcott; the books attain a high level, and were, and people say are, very welcome. As for the monster, half-submarine, half-plane, that Jules Verne dreamed of, if it does not attract as it should it will be owing to the fact that the real thing has almost outdistanced the dream. The book is well illustrated and finely printed. "Mother Molly" is a West-country tale beautifully illustrated by M. Wheelhouse; it is of the times, warlike. "Colin and Joan" is more juvenile, but "Kit" and "Derek" deal with school life and with South Africa. Each is illustrated. "Jack the Englishman" goes to Australia for its scene; adventures are scattered broadcast.

The Golden Legend. Selected and edited by G. V. O'Neill. 294 pp. (Cambridge University Press.) 3s. net.—Again and again we have noticed the excellence, the peculiar excellence, of some of the literary work for schools that is done by Jesuit editors. This volume is a brilliant example. It is true that it contains but a tenth of Caxton's translation; but readers may be sent to Mr. Ellis's fuller version. We quarrel with the old-world title for a schoolboy; the Golden "Legend" is the Golden Reading, or, to use another misleading term, the Golden Lesson. Probably the editor could tell us, but he does not, when the word *legenda* first became a singular noun with a plural *legendæ*. A brief introduction, which scarcely places Jacobus de Voragine in his important literary niche along with some of the collectors of the *Exempla*, is followed by an account of Caxton, in which, while doing the great man full justice, people are warned that, as Caxton himself says, he was but a careless translator; though all our primers repeat one another in their eulogies. It was but likely that our editor should have omitted all mention of Reynard the Fox, but it is singular that Caxton should have done the same. The English of Caxton is admirably modernised; the selections are well chosen, and the notes are a model of what notes should be. Perhaps it did not suit the editor to lay stress on the undoubted fact that our ancestors heard a good deal of the Bible long before Tyndale lived; but it is well known that Gasquet has even advanced a suggestion that "Wyclif" is a Catholic version! Probably a Protestant writer would make some fun of the laboured note that tells us we exaggerate in thinking medieval sanctity indifferent to cleanliness; and there is, but it has not yet been uttered freely, a possible criticism of the modern ecstasies, so fashionable, over the traditional St. Francis. But the book is a notable addition to reading for schools.

The Growth of the English Drama. By A. Wynne. 281 pp. (The Clarendon Press.) 3s. 6d.—As the writer says, we have had a good deal on this subject of late; but all books have to acknowledge their debt to Mr. E. K. Chambers. The first chapter strikes the note of the book; all English drama came from church plays and all former drama had been forgotten. Now it will require a great deal more than quotations from Mysteries and the like to prove this to the hilt. Drama in its production steps pace by pace with the civilisation of a country, and it is innate in humanity. It is open to doubt whether the drama does not owe quite as much to the people, their revels, their dances and dialogue, their sheer paganism, as to the church which took on a great part of the buffoonery. The

writer gives us full chapters on the Rise of Comedy and Tragedy, all orthodox; and a brief appendix contains one of the clearest accounts of the early stage-machinery that are to be found. But illustrations are not here, or any guide to the literature of the subject. Italy is neglected; and, on the whole, the people, to whom most of our literatures are *au fond* due, do not get their full recognition.

The Cloister. A play in four acts. By Emile Verhaeren. Translated by Osman Edwards. 67 pp. (Constable.) 2s.—Some of the work of the now well-known Belgian poet has already been translated by Mr. A. Symons and Miss Stretell, but we believe this is the first time "The Cloister" has been done into English. The play itself is of absorbing interest to those who value characterisation of the peculiar mortals who stand—as the Prior, Thomas, Militien, Mark, and Balthazar stand—for five utterly different attitudes of the soul towards the great things of even a monastery life. People may contend that the protagonist's remorse is unlikely in its action; but allowance must be made in all monastic plays for the monastic stress on character. The play, however, has been acted in England more than once, but it is rather to Mr. Edwards's translation that we wish specially to refer. Good translators are rarer birds than poets, and Mr. Edwards is one of the rare company. His own modest preface prepared us for good work, but not for such real excellence.

Exercises in Prose Literature and Composition. By C. G. Dent. 299 pp. (Clarendon Press.) 3s. 6d.—Mr. Dent has published a series of volumes in three graduated parts, giving text and exercises, text only, and finally a teacher's book giving the three parts with exercises in one volume. It is the teacher's book which we are now reviewing. It contains nearly eighty passages, or about eight passages for each year of school life from eight to eighteen. It is thus obvious that Mr. Dent means his method, or at any rate his text-book, to be used only occasionally. The method, for such occasional use, has much to recommend it, and, to judge from the number of such books recently published, it is evidently growing in favour. Like most methods, it will give excellent results in the hands of a capable teacher, and in the hands of the less capable it will quickly reveal the defects of its merits. The aim is to encourage intensive study rather than emotional appreciation. Sometimes it is done in this way: "why (in Miss Mitford's account of "Our Dog 'Dash'") are the maids not given a sentence to themselves?" And the answer suggested is: "Because their liking is probably not sincere." Well, we fancy that a class brought up in this style will not be sincere either. Our example, of course, is quite unfair, but quite irresistible. If teachers will catch the spirit of Mr. Dent's book, for occasional use, their lessons will be none the worse and probably all the better.

Lowell's Fireside Travels. With an Introduction by E. V. Lucas and Notes by F. A. Cavanagh. 270 pp. (Clarendon Press.) 3s. 6d.—Mr. Lucas appears to have known this book all his reading life; but he admits that many Americans are ignorant of it. It contains five travels that may be called fireside and a much longer "Essay on Cambridge Thirty Years Ago." The Americans of repute excel as guides to Italy and even to England, and Howells may be ranked with Lowell. But this book is not to be judged for its information; we look for and find the man who wrote the "Essay on Chaucer." It is rarely that any irresponsible reviewer feels inclined to differ from Mr. Lucas; but when Mr. Lucas, who knows Charles Lamb, says that Lowell's first essay is

not Lamb we demur. To us it is sheer imitation, good imitation, all through; and so is part of the rest of the book. The book is literature, and is crammed with good things, with short good stories, and it contains one or two things that Americans do not relish. It will probably be new to most Englishmen, for since 1864 it has not been reprinted. All lovers of Lowell should be grateful. The notes are meant for schools, and we suppose the book is meant for schools too. It is much too difficult and allusional.

History.

Political Thought in England from Bacon to Halifax. By G. P. Gooch. 256 pp. (Williams and Norgate.) 1s.—It is not necessary to praise Mr. Gooch as a historian; his books are too well known, and in this little volume he has condensed the results of his wide reading on English thought in the seventeenth century. To enumerate the writers whose opinions he here summarises and illustrates with quotations would be merely to give a catalogue too long for our pages. Beginning with James I. and Bacon, he devotes a chapter to Hobbes, and then gives the opinions of all the men and parties who took part in the struggles of 1625-60. Dryden, Filmer, Sidney, and others illustrate the theories of the Restoration period, and a chapter is devoted to those of Halifax the "trimmer." Two chapters are given to opinions both written and acted upon with reference to the relations of the State with religion and with trade. Finally, there is a bibliography as well as an index. The only point we find to criticise is Mr. Gooch's reference to "Nonconformist" opinion on the question of religious liberty. On p. 146 he says, "every nonconforming body denied the authority of magistrates in matters of religion," and on p. 216 that Rhode Island "bulks largely as the first place where complete religious liberty was both taught and practised." Surely he knows that John Robinson, of Leyden, expressly controverted the Baptists on this point, but that his followers founded at New Plymouth in 1620 a "civil body politic" without any laws on religion.

A Picture Book of British History. Compiled by S. C. Roberts. Vol. i., *From the Earliest Times to A.D. 1485.* xii+68 pp. (Cambridge University Press.) 3s. 6d. net.—This album of historical illustrations is well designed and executed. It contains thirty-three pages of prints, comprising nearly two hundred separate items, relating to the ancient and medieval history of England. Each page is accompanied by a series of brief notes giving the minimum of necessary explanation. Many of the illustrations are from contemporary sources; others are photographs of historic sites as seen to-day; a few only are works of the imagination. The arrangement is chronological. The volume should prove to be a valuable addition to the school library.

A Short History of Rome for Schools. By E. E. Bryant. 262 pp. (Cambridge University Press.) 3s. 6d. net.—A good short history of Rome, suitable for middle forms, has long been needed, and this deserves a warm welcome, because it is in so many ways much better adapted to such forms than anything we have yet seen. Chiefly is this the case because of the wealth of illustrations, maps, and plans (forty-eight in number, and all excellent) which it contains, and because the narrative is bright and interesting without being childish. The period covered is from the beginning down to Augustus, and stress has been laid on principles, such as the development of Roman character and on social and political tendencies. The book is well printed in clear type on good paper.

Oxford County Histories: Leicestershire. By Charles E. Kelsey. 220 pp. (Clarendon Press.) 1s. 6d. and 2s. 6d. net.—This volume is a welcome addition to the lengthening series of county histories published by the Oxford University Press. An admirable model was set by the first of the series, viz., Mr. Lamborn's "Berkshire," and its successors have more or less closely conformed to it as a type. Mr. Kelsey has, moreover, brought to the treatment of Leicestershire the experience which he gained in writing the history of the county of Cheshire. The result is a thoroughly sound and workmanlike sketch. Leicestershire, although a late and artificial shire, is rich in antiquities and historical associations. It can boast of the remains of the important Roman settlement of Ratae Coritanorum, as well as a section of the Fosse Way. It is closely associated with Simon de Montfort, John of Gaunt, Wycliffe, and Robert Dudley. It saw the decisive battle of the Wars of the Roses, and a critical siege in the great Civil War of the Stuart period. Mr. Kelsey everywhere links his local history to the history of the nation, and no boy or girl in the county who reads this little book can fail to have his interest in the record of England's development quickened.

(1) *Our Country's Industrial History.* By William J. Claxton. 253 pp. (Harrap.) 1s. 6d.

(2) *The Elements of Commercial History.* By Fred Hall. 156 pp. (Pitman.) 1s. net.

These two text-books are intended for two distinct classes of readers, and are calculated to serve two very different purposes. Mr. Claxton's book deals wholly with England; it summarises the results of the researches of such writers as Cunningham, Toynbee, and Gibbin, and it is adapted primarily for school use. One of its conspicuous features is a large number of well-chosen illustrations. Altogether it furnishes a convenient and attractive introduction to the study of economic history.

Mr. Hall writes for more mature readers. His book "will be found of special utility to those who are engaged in commercial administration" or to those who "wish to trace the development of modern commercial organisation." It does not limit its scope to the British Isles, but treats of world-commerce, particularly from the close of the Middle Ages to the present time. It is full of precise and valuable information. There are no illustrations (which would have been irrelevant) or maps (which would have been of very great assistance to an understanding of the text).

Toryism. By K. Feiling. xii+158 pp. (Bell.) 2s. 6d. net.—This is a quaint little book. The author describes it as "a political dialogue," and it is indeed that. There are four characters, members of the "Tory" party, whatever that may be, who discuss the question of a policy, but one of them does most of the talking and is the vehicle apparently for the author's views. The talk wanders over most of the subjects of current politics, but the main idea seems to be that the "Tory" party should advocate a return to the ideas of the Middle Ages, loyalty to God and King, a large measure of decentralisation of government, and an attempt to make the country self-sufficing. For local affairs, the franchise should still be wide because people in general understand those matters, but for central government, international politics, etc., Mr. Feiling adopts towards the majority of his fellow-countrymen the attitude of James I. to his Houses of Commons; they do not understand these matters, and it is not their business.

The Story of Thomas Becket. By Susan Cunningham. 186 pp. (Harrap.) 1s.—This short biography of St. Thomas of England is one of Messrs. Harrap's excellent series "Heroes of all Time." It is well and lucidly written, and it is based on a large number of recognised authorities. Its one serious defect—a defect common in biographies—is its uncritical eulogy of its subject. "Thomas Becket, the London burgher's son," says Miss Cunningham, "Chancellor of England and Archbishop of Canterbury, stands for ever as one of the hero-names in our history." If Becket stands as a hero at all, he does so not in English history, but in ecclesiastical history. He embroiled Europe and died, not for English liberties, but for clerical immunities. Dean Milman's judgment is severe, but just: "Becket was the martyr of the clergy, not of the Church; of sacerdotal power, not of Christianity; of a caste, not of mankind. From beginning to end it was a strife for the authority, the immunities, the possessions of the clergy." Nevertheless, he played a prominent part in the affairs of twelfth-century England, and a knowledge of his life is essential to the understanding of his times. If any reader of Miss Cunningham's sketch is carried away by her enthusiasm, Froude's "Short Study" of Becket may be commended as an antidote.

Geography.

The Statesman's Year-Book for 1915. Edited by Dr. J. Scott Keltie. 1600 pp. (Macmillan.) 10s. 6d. net.—The editor and his assistants have met with unusual difficulties in the preparation of the present edition of the "Statesman's Year-Book"; these difficulties were due, of course, to the great war, in consequence of which no official returns were available for Germany and Austria-Hungary, while the trade of Belgium, Serbia, and other countries has been completely disorganised. Notwithstanding these difficulties, the various articles have been revised most carefully, the descriptions of some countries have been rewritten, and in all cases the latest available statistical information has been obtained.

The bibliographies of the various countries have always been a valuable feature of the Year-Book; this year the editor has added a useful list of the more important publications on the war, arranged according to countries of origin, and including German publications. The maps in this edition are also of particular interest at the present time, such as (a) the ethnographical sketch map of Central Europe, (b) the expansion of Prussia, (c) the three partitions of Poland.

During the past year important changes have taken place in all parts of the world, and these changes are unrecorded in the ordinary school text-books; teachers of geography and of history are obliged, therefore, to revise the statements of the text-books. The Statesman's Year-Book is most suitable for this purpose, and a copy of it should be in the reference library of every school; it not only contains the most up-to-date information, but it is also arranged in such a way that the required facts can be ascertained without unnecessary trouble or delay.

Cambridge County Geographies: Clackmannan and Kinross. By J. P. Day. 145 pp. *Moray and Nairn.* By C. Matheson. 139 pp. (Cambridge University Press.) 1s. 6d. each. The series to which these volumes belong is so well known that it suffices to say, in general, that both these books maintain its valuable and interesting features. Mr. Day's sketch-maps showing the influence of the physical features on the lines of communication in Clackmannan and Kinross; his rainfall graphs for Scotland in general; his references to river piracy in connection with the Devon,

are notable additions to the general scheme. In Mr. Matheson's book there is a reference, accompanied by an interesting diagram, to the lake-dwelling at the Loch of the Clans (Nairnshire), as well as valuable particulars about the effect of river floods. The peculiar geological features of the valley of the river Spey should be of interest to teachers of geography.

The Oxford Geographies. Australia in its Physiographic and Economic Aspects. By Griffith Taylor. Pp. 256. Maps and diagrams. Revised edition. (Clarendon Press.) 3s. 6d.—Mr. Griffith Taylor has improved his book on Australia by adding certain maps, especially in reference to the climate of the continent, by revising others, which are better since they have been re-drawn, and by adding to the text in many places. The book therefore is more than ever entitled to its position as the premier school book on Australia, written from first-hand knowledge of the country.

Common Commodities of Commerce. Timber. By W. Bullock. 149+ix pp. *Leather.* By K. J. Adcock. 161+vi pp. Illustrations. (Pitman.) 1s. 6d. net each.—These two recent additions to a well-known series should be added to the teachers' reference library. In both cases the story of the commodity, from the raw material to the finished product, is told with precision. The illustrations are clear and useful; and, although the text contains many facts which are more valuable to those who are engaged in the commercial and industrial establishments of the respective commodities, yet the teacher will find within a comparatively small compass facts which are useful for school purposes.

The Pupil's Class-Books of Geography. I., The British Isles. II., The British Dominions. By E. J. S. Lay. Pp. 118 and 128, maps. (Macmillan.) 6d. each.—The more we examine these books the more we like them. Designed to stimulate the child to a spirit of inquiry and to supply the material to satisfy, in part, the children's questions, they provide the teacher with an opportunity to supplement the main outlines of the geography of the British Isles and the British Empire. The maps are excellently done. There are sets of instructive exercises (a) map-readings, etc.; (b) "Things to do"; (c) "Things to learn"; as well as short illustrative extracts in verse.

The English Countryside. By E. C. Pulbrook. 136 pp. 126 illustrations from photographs. (Batsford.) 7s. 6d. net.—It is a long time since we received a book which provided so much pure enjoyment. Mr. Pulbrook's book breathes such quiet charm, such sincere appreciation of rural England, that the reader is transported from the garish surroundings of the city and the bustle of daily toil to the fresh and calm delights of the English countryside. On a quiet June evening, amid the roses of a suburban garden, this book gave an added joy to a day which had been replete with the gladness of sun and air and sky; we handled the book with pleasure, since its format suits the theme; we closed it with regret. Though the pleasure of first acquaintance can never happen again, it can take its place on our shelves, a welcome addition to a circle of friends.

Beginner's Regional Geography. Asia. By J. B. Reynolds. Pp. 64. 30 illustrations, half in colour. (Black.) 1s.—Miss Reynolds is to be congratulated upon the scheme of this book, which is intended for children between the ages of seven and ten. A topic, e.g., the steppes, monsoon lands, is taken for each

pair of pages; one page contains an illustration and the other the text and suggestions for hand-work or drawing. The amount of information conveyed to the child is obviously small, but the general "atmosphere" to be associated with the name Asia—an "atmosphere" of variety, of unaccustomed methods of life, etc.—is maintained, both by the choice of topics and their treatment.

An Introduction to General Geography. By A. A. Golding. 222+x pp. (Cambridge University Press.) 4s.—Mr. Golding's book is "a rather full notebook of work done in class," and illustrates the crying need for a definition of the import of the term "school geography." He has covered the ground not only of geography as a "human science," but also of many ramifications into physiography, ethnology, and other kindred sciences. His book will be useful to teachers as a summary of the facts which "geography" is supposed to include. His diagrams suggest successful blackboard illustration, and the world diagrams would make useful lantern slides.

Mathematics.

Homogeneous Linear Substitutions. By H. Hilton. viii+184 pp. (Clarendon Press.) 12s. 6d. net.—In this book the writer has brought together those properties of the homogeneous linear substitution with real or complex coefficients of which frequent use is made in the theory of groups and in the theory of bilinear forms and invariant-factors. The student whose interest in the subject lies chiefly in the direction of its applications, such as the solution of linear differential equations, or the classification of conicoids, will find that a study of the first four chapters will put him in possession of the theory necessary for this work. The first chapter deals with elementary properties of substitutions, the second with invariant-factors, and the third with bilinear forms, applications being discussed in the fourth chapter. The remaining five chapters are concerned with the more abstract theory. An excellent feature of the book is the large number of examples with results and in many cases hints for solution which are scattered through the chapters. The student who works a sufficient number of these will obtain a grip of the subject which a mere reading of the text would fail to give him.

Improved Four-Figure Logarithm Table. Multiplication and Division Made Easy. By G. C. McLaren. 27 pp. (Cambridge University Press.) 1s. 6d. net.—Four-figure logarithm tables usually give the logarithms of all numbers with three significant figures. If the logarithm of a number with four significant figures is required it is obtained by interpolation between the tabulated logarithms, the interpolation being facilitated by the addition of columns of differences. If suitable type be used such tables can be printed on two pages facing one another, and the mechanical labour of consulting them is reduced to a minimum. Their drawback consists in the accumulation of small errors in unfavourable cases owing to the tabulated values being only approximations to the true values, and more especially from the columns of differences giving only the average values of the differences for a line of ten entries. Greater accuracy is obtainable, as in the tables before us, by tabulating all numbers of four significant figures, but eighteen pages are now required instead of two, and the mechanical labour is thus increased. A thumb index, however, facilitates the reference. The accuracy of the tabulation is increased by the addition of dots indicating the value of the last figure to the nearest third. After making trial of the tables we have come to the conclusion that although the mechanical con-

venience of the tables is slightly less than that of those in common use, there is a considerable saving of mental labour, more especially in finding the number corresponding to a given logarithm. With these tables there is no advantage to be gained in providing a separate table of anti-logarithms. The explanation preceding the tables, though not altogether satisfactory, will probably be sufficient for persons who wish merely to multiply and divide. But if a person wished to extract the square root of, say, 0.1357, he would consult the book in vain for information as to how it was to be done. We think Mr. McLaren can scarcely be ignorant that there is such a thing as the characteristic of a logarithm, but he manages to avoid mentioning it.

Exercises in Arithmetic and Mensuration. By P. Abbott. ix+524+86 pp. (Longmans.) 3s. 6d. With Answers, 4s. 6d.—It is a matter for congratulation that the rigid divisions which separated one branch of mathematics from another, even so recently as twenty years ago, seem to have been finally broken down, so that, for example, the problem of geometry and the methods of arithmetic are brought into intimate association with one another. In the book before us full advantage is taken of the freedom which teachers thus possess in making use of the results of one mathematical discipline to enforce and illustrate the lessons of another. In the earlier part of the book problems alone are given, the necessary instruction being left to the teacher, but the later exercises have been supplemented by notes on theoretical points. The amount of ground covered is very considerable, including plane and solid mensuration, pure and commercial arithmetic, the elements of trigonometry, and logarithms. The examples appear to be well graduated; they are drawn from different sources, are varied in character, and in many cases relate to matters of practical importance.

Science and Technology.

Educational Handwork. By A. H. Jenkins. 229 pp. (Clive.) 2s. 6d.—The object of this book is "to give in one volume a course of instruction dealing with all the processes and forms of handwork commonly practised in schools." Plastic, raffia, and basket-work are touched on; paper and cardboard modelling, woodwork, and elementary metalwork are treated in more detail. But although the book contains some five hundred figures, the subject is too large to be covered adequately by a single volume. Like most other books on handwork, this book recommends a definite sequence of models and, apparently, a formal scheme of accompanying lessons. To the novice in teaching, who has not yet worked out his own scheme, or who lacks faith in the ingenuity and inventiveness of his pupils—even when backed by his special knowledge—the book will be useful. Many of the models are new and, what is better, most of them are suggestive; while the accompanying notes on method and common difficulties, although brief, are clear and to the point. We have often deprecated attempts to standardise courses of manual training. The teacher who appreciates the objects of educational handwork, who has understood the introduction given on pp. 1-5 of this book, and refuses to allow any scheme to crystallise, will find the treatment of Mr. Jenkins suggestive. The author would fail in his object were any other teacher to adopt his scheme *en bloc*.

Numerical Examples in Physics. By H. Sydney Jones. 332 pp. (Bell and Sons.) 3s. 6d.—This volume is intended to meet the needs of students in universities and secondary schools, and to serve as a

complement to laboratory work and an introduction to mathematical physics. The examples are confined to heat, light, magnetism, and electricity; limits of space have prevented the inclusion of examples in sound and in the properties of matter. Of the many available collections of examples in physics there is perhaps only one other published volume which treats the subject in so thorough a manner as the one under review. Instead of the unadorned collection of questions, mostly from examination papers, we have a thoroughly serious treatment of the subject. Wherever desirable, a short discussion of the theory, and a statement of definitions, precedes a well-selected group of examples, either numerical or to be worked graphically; and these examples are often based upon experimental data such as the student would obtain in the laboratory. Many of the examples are distinctly novel, and in some cases quite advanced in standard. A short appendix of physical tables and a complete set of answers are included.

Pond Problems. By Ernest E. Unwin. xvi+119 pp. (Cambridge University Press.) 2s. net.—The problems presented by the commoner insects inhabiting ponds have long fascinated naturalists, and in this little volume Mr. Unwin has utilised very effectively for school use some of the simpler among them. "The book," he says, "is the outcome of attempts to put Prof. Miall's book on aquatic insects into a form suitable for use in the classroom." Clear instructions for the collection and identification of specimens, and the setting up of aquaria and observation tanks are given in the first chapter, but the greater part of the book is concerned with the problems the pupils are set to solve, and with the descriptive passages following each set of practical exercises. The book will be a real help to teachers anxious to depart somewhat from the beaten track in nature-study, and is sure to become popular with pupils who use it. It is well illustrated by drawings and by reproductions from photographs, and is very attractive in appearance.

Electrical Engineering. Vol. i. (Introductory). By Dr. T. C. Baillie. 236 pp. (Cambridge University Press.) 5s. net.—In this well-printed volume the author's intention has been to provide a text-book for elementary courses in electrical engineering; and, according to the preface, one of the main purposes of the book is to teach first principles while avoiding an excess of descriptive detail. It is to be regretted that text-books on applied electricity often fail to supply adequate information as to first principles. In this case much valuable space, which would have been available for this important section, is occupied by reproductions of instruments from trade catalogues, many of which might be dispensed with. Thus, in the brief section on ammeters and voltmeters, the *external* views of no fewer than twelve instruments are given, at the cost of more than four pages of letterpress. In the section on resistance-boxes there are eight reproductions from catalogues. Only fourteen pages are given to the discussion of dynamos, and nearly one-half of this space is occupied by illustrations, some unnecessarily simple and others unduly elaborate for a book of this standard. Tables of data also occupy space which might have been used to better advantage, e.g. a whole page is occupied by the complete list of international atomic weights, and another by data concerning the Edison cell. The chapter on the potentiometer is very good, and by far the most satisfactory in the book. The letterpress contains much useful information; but it lacks balance, sometimes being unduly advanced for a book of the standard intended.

Easy Practical Science (Experimental Mechanics and Physics). By E. Sankey. (Edward Arnold.) Book I. 64 pp. 6d. net. Book II. 96 pp. 8d. net.—These little laboratory guides, which follow familiar lines and are arranged on the "concentric" plan, may be commended to the notice of teachers of practical physics in preliminary technical classes and the lower forms of secondary schools.

A First Course in Chemistry. By W. McPherson and W. E. Henderson. 416 pp. (Ginn.) 5s. 6d.—Like most American text-books, the printing, get-up, and pictorial matter of this volume are beyond reproach. Some of the illustrations would be considered quite unnecessary, however, in an English manual written for the same class of student. For example, on p. 11 we have a beautifully reproduced block of an alchemist's laboratory, on p. 18 a picture of twenty-one oxygen cylinders "ready for the market," on p. 22 a view of a sewage farm, and on p. 125 an interior of a cold-storage room. At the same time that welcome stress is laid on the intimate connection between chemistry and everyday phenomena, which we have come to expect from American authors of scientific handbooks. No one could ever accuse the authors of writing a cram book, but the opposite extreme undoubtedly has its dangers, hence the lack of cohesion and of arrangement, the immense amount of unconnected though useful fact, must give the first year student a painful attack of mental indigestion.

A Text-book of Chemistry. By W. A. Noyes. 602 pp. (Bell.) 8s. 6d. net.—When so eminent a chemist as Prof. Noyes, of Illinois, writes a text-book one is justified in expecting a production which will escape from the ordinary rut. Whilst in some particulars this expectation is realised, the book, as a whole, is a profound disappointment. The bald facts which have appeared in generations of manuals on chemistry appear again, with the added drawback of American spelling. Such work as this is best left for the smaller fry in the chemical world. Considering the number of remarkably similar text-books of chemistry which we possess, it is really difficult to discover why the author, with the assistance of the twenty-six *conféres*, who, as mentioned in the preface, met nearly every week for three years to discuss the subject-matter, did not attain something astonishingly original. In spite of the encyclopædic knowledge presumably at the disposal of this large committee of publication, there appears still an obsolete method of preparing hydrazine on p. 222; no mention is made of the brilliant work of Dr. H. B. Baker on nitrogen trioxide; in the section on crystals all reference to Mitscherlich is omitted; the time-honoured howler is again dished up, anent the heating of the copper oxide by the bunsen burner in Dumas and Stas's synthesis of water; the Glover tower is stated to be packed with coke; whilst the method for the reduction of nitrobenzene on p. 340 is not the commercial method as asserted; further, we in England spell Priestley with two *e*'s. Since the book is ostensibly written for college students, who may, or may not, have had a course in chemistry at school, there is no obvious reason for the inclusion of a hotch-potch of facts concerned with amines, dyes, alkaloids, enzymes, foods, and nutrition in the midst of a purely elementary course.

When, however, Prof. Noyes discusses matters of physical chemistry the treatment is sound and illuminating. Such subjects as the phase rule, ionisation, catalysis, and the theory of indicators are excellently handled.

Miscellaneous.

The Ancient East. By D. G. Hogarth. 250 pp. (Williams and Norgate). 1s. net.—This volume, in the "Home University Library," is a valuable sequel to the authoritative "Dawn of History" in the same series. Though so limited a book can do no more than give a general survey, none of the defects of compression or of a mere summary are visible. In picturesque and easy style Mr. Hogarth has presented his readers with a vivid and complete outline sketch of this interesting section of human history. Details can be filled in from other fuller works mentioned in a concluding note. The importance of the book as a sound basis for further reading along its lines cannot be rated too highly. The arrangement, in two-century periods, is good, and carries the reader easily along to a scholarly conclusion contained in "The Victory of the West," and an epilogue. Half a dozen full-page maps scattered throughout the text, and having special reference to various points raised, add materially to the value and clearness of the book.

Studies in the Spirit and Truth of Christianity. By William Temple. 234 pp. (Macmillan.) 3s. 6d. net.—This collection of university and school sermons could scarcely have had a more appropriate title. Throughout, with delicate touch, Mr. Temple brings us into gracious intimacy with the central spirit of Christianity, the while he fascinates and dominates with the clearness of his revelation of eternal truth. It is a most suggestive and satisfying book. We can conceive of no finer or more arresting sermons to older boys of public schools and young university men. In every one there are the notes of encouragement, enlightenment, and inspiration; in most there is the song of triumph and optimism; each brings the reader into an atmosphere of buoyant hope. The haunting message of the book is thoroughly manly, helpful, and searching, and one is unable to contemplate it without a pang of regret that the able author of it is no longer at the head of one of our great schools.

Notes on the Gospel According to St. Matthew. By C. R. Gilbert. 88 pp. (Mills and Boon.) 1s.—This is a collection of notes and questions on the first Gospel. Its purpose is to be a companion to the study of the text of the Authorised Version. The text is not given—a gain in many ways, for the student is driven in the right direction, that of studying directly from the Bible itself. Unfortunately the direction is towards the Authorised, and not Revised, Version. Surely the former, with the existence of the latter, is now out of date, at any rate, for school study. The notes are good, some of them excellent, and the value of the well-chosen questions is materially increased by the arrangement in chapters. Appendices—of a worth to merit larger type—and a very useful concordance-index are included in the last few pages. Some misprints in the references will doubtless be corrected in a later edition. Altogether the book should prove of much value in the hands of a capable teacher or earnest student.

St. Mark. By Rev. A. Plummer. 211+xlvi pp. (Cambridge Bible for Schools and Colleges.) 2s. net.—The addition of this excellent commentary to an always trustworthy series is very opportune in view of the syllabus of the Locals Examinations of 1916. The teacher of a class for any stage could desire no better handbook, and no better text-book could be used in senior classes. It is difficult to find new terms in which to praise this series, which is rapidly and deservedly becoming established as the standard small commentary. Elementary and brief enough to

be used by any person of ordinary education, and yet scholarly and authentic enough to be quoted as an authority, Dr. Plummer's new work is no whit behind any of the previous New Testament volumes in this series. For the size of the book, the introduction is almost exhaustive—and as interesting as full—and maps and a plan add to the value of the book for class use.

The First Epistle of Peter. Edited by the Rev. G. W. Blenkin. lxxxviii+132 pp. *The Epistle to the Ephesians.* Edited by the Rev. J. O. F. Murray. ciii+150 pp. (Cambridge University Press.) Each 3s. 6d. net.—These are two of the latest additions to the well-known "Cambridge Greek Testament for Schools and Colleges." Each volume contains the Greek text together with copious notes and elaborate introduction. They should be very valuable to all who have to offer these books for examination.

EDUCATIONAL BOOKS PUBLISHED DURING JUNE, 1915.

(Compiled from information provided by the Publishers.)

Modern Languages.

Cambridge Modern French Series:—"La Maison aux Panonceaux avec des Exercices et un Lexique." By Lady Frazer. xii+122 pp. 1s. 8d. "Causeries du Lundi. Franklin et Chesterfield." By C. A. Sainte Beuve. Edited by A. Wilson Green. xii+120 pp. 2s. 6d. (Cambridge University Press.)

"Tamango." By Mérimée. 24 pp. (Clarendon Press.) 6d.

"Le Petit Vocabulaire." By A. A. Méras. 72 pp. (Harrap.) 4d.

Soldiers' Language Manuals:—No. I., "English-French." By Ajax. Sixth edition. 24 pp. (Marlborough.) 3d.

"Passages for Translation into French (Senior Course)." By A. R. Florian. 160 pp. (Rivington.) 2s.

Classics.

"Historical Latin Grammar." By W. M. Lindsay. Second edition. 236 pp. (Clarendon Press.) 5s. 6d.

"A Book of Latin Verse." Collected by H. W. Garrod. 308 pp. (Clarendon Press.) 3s. 6d.

"Latin Self-Taught." By J. Topham. Second edition. 144 pp. (Marlborough.) 1s.; cloth, 1s. 6d.

"The Battle in the River Scamander and the Death of Hector." Books XXI. and XXII. of Pope's translation of the Iliad of Homer. 40 pp. (Oxford University Press.) 6d.

English: Grammar, Composition, Literature.

"Stories from 'The Earthly Paradise.'" Re-told in prose by C. S. Evans. 216 pp. (Edward Arnold.) 1s. 6d.

"Black's Supplementary Readers." 48 pp., with frontispiece in colour and other illustrations. Junior I. (Fairy Realm Series). New books. 2½d. each.

(1) "Tales from Andersen," (2) "Tales from Æsop," (3) "Tales from Grimm," (4) "Tales from the Arabian Nights." Re-issues. Price 4d. each. Junior II.

96 pp., with frontispiece in colour and other illustrations. "Old Time Tales." By Mrs. Craig. "From Sweep to Water-Baby." By Charles Kingsley. "Folk Stories." By the Brothers Grimm. Intermediate

(with Composition Exercises). 96 pp., with frontispiece in colour and other illustrations. "Tales from 'The Earthly Paradise.'" In three books. By William Morris. "Eric: A Tale of School Life." By F. W. Farrar. "Tales of Wonder." (From Hawthorne's

"Wonder Book" and "Tanglewood Tales.") "Lords of the Castles." By Frances Brown. Senior (with Composition Exercises). 96 pp., with frontispiece in colour and other illustrations. "Rab and his Friends, and Our Dogs." By John Brown. With a character sketch of the author. "Great Deeds on Land and Sea." Compiled from Rev. W. H. Fitchett's "Deeds that Won the Empire" and "Fights for the Flag." "Tales from Dickens." "A Christmas Carol" and "Little Dombey." By Charles Dickens.

Chaucer: "The Prioresses Tale and the Nonne Prest; his Tale." Edited by R. J. Cunliffe (Blackie's Smaller English Classics.) 40 pp. (Blackie.) Paper, 2d.; cloth, 3d.

"Marvellous Escapes from Peril." As told by survivors. By Walter Wood. (School and Home Library of Famous Books.) 192 pp. (Blackie.) 1s.

"A Junior Graphic Grammar." E. A. A. Varnish and J. H. Hanly. viii+166 pp. (Cambridge University Press.) 1s. 8d.

Johnson: "Life of Gray." (Oxford Plain Texts.) 14 pp. (Clarendon Press.) Paper, 3d.; cloth, 4d.

Tennyson: "Enone and Lotos-Eaters." With Introduction and Notes by F. A. Cavenagh. 36 pp. (Clarendon Press.) 1s.

Lowell: "Fireside Travels." With Introduction by E. V. Lucas, and Notes by F. A. Cavenagh. 270 pp. (Clarendon Press.) 3s. 6d.

Shakespeare: "King Lear." (Oxford Plain Texts.) 90 pp. (Clarendon Press.) 6d. net.

Spenser: "Faerie Queene V." (Oxford Plain Texts.) 154 pp. (Clarendon Press.) Paper, 9d.; cloth, 1s.

"The Happy Readers." I., II., III. By H. Ada Beeny. 59 pp., 91 pp., 124 pp. 6d., 7d., 8d. Teachers' Book. 32 pp. 3d. (Jack.)

Milton: "Paradise Lost." With Introduction and Notes by Rev. J. C. Scrimgeour. Book I., 128 pp. 1s. 6d. Book II., 136 pp. 1s. 6d. Complete, 216 pp. 2s. 6d. (Macmillan.)

Landor: "Imaginary Conversations." (World's Classics.) 512 pp. (Oxford University Press.) 1s. net.

"School Poetry for the Junior Division." 64 pp. (Ralph, Holland.) 4d.

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National Education and War.

AMONG the minor phenomena of this time of stress and turmoil are certain signs of awakening interest in our national system of secondary education—if the term system may be applied to what is chiefly remarkable for its lack of organisation. On the whole, we may say that such as have expressed an opinion have betrayed a certain smug satisfaction that we are not as other men are, and have displayed more ostentatiously than usual their all too broad phylacteries. They have pointed the finger of scorn at all who presumed to criticise our schools and schoolmasters before the war, and have shaken their wise heads over the blindness of those who dared to hazard any doubts of the perfection of our ideals and the sufficiency of our activities. On the other hand, there are others who are more alive to the nation's needs; who see that the present struggle is a contest between nations organised on a scale undreamt of before, and who are aware of the part to be played by rival

systems and ideals of education in determining the result. The task set before us of gaining the victory, they argue, will be greater or less, according to the efficiency of the warring States, and efficiency depends in the last resort on education.

It is a matter of surprise that all those who of recent years were dissatisfied with the state of secondary education in England, drew their inspiration and pointed their moral solely from the example of Germany, especially when we consider that Matthew Arnold had recommended his contemporaries to imitate our Allies across the Channel. But then this is, after all, merely another instance of the baneful effect of politics on education. Our debt to the Germans in the realms of criticism and scientific investigation, whatever our present opinion may be as to the intrinsic value of the results obtained, led many people of influence to advocate what amounted to the Germanisation of our schools and universities. We may suppose that our insular prejudice and stubbornness were too strong for such innovators, and we may doubt whether they would have ever succeeded in their aims. Our business men—unfortunately, in some respects—pay the piper, and therefore call the tune to which we schoolmasters must all dance; they were not disposed to welcome any novelty which was borrowed from the practice of their most feared, and therefore most hated, competitors. Is it to be wondered that at this time, when we are involved in a struggle for the preservation of all that we hold most dear, we find many who, forgetful of the old tag, "*Fas est ab hoste doceri*," look with suspicion on any reform which may by any stretch of imagination be said to have been "made in Germany"? Such, for example, has been the criticism levelled at the Board of Education's proposal to institute a school leaving certificate. From this it seems probable that many other long overdue reforms will experience similar opposition. Those who confound licence with liberty will persist in their policy of supporting muddle and inefficiency, and will fortify their obstinacy and quell any incipient doubts as to the correctness of their attitude by the example of the, let us hope, mythical bishop, who said that he would rather have England free than sober.

The most sincere and ardent advocates of reform are not oblivious, we may suppose, of the unique advantages enjoyed by our pupils, or blind to the benefits conferred by our peculiar system. We rightly pride ourselves on the love of truth, honour, freedom, and courtesy, the corner-stone of our edifice. Whatever our enemies have done, or may do, we at least consider such virtues as indispensable, and are ready to sacrifice other more utilitarian advantages, if only they may be preserved. The cleanness of mind and body, the *esprit de corps*, the sense of justice and desire to play the game are invaluable assets of Empire. But is it not possible to retain all these and yet add greater intellectual keenness, a more widely diffused love of learning for its own sake, a deeper sense of the wonder and mystery of the universe, a wider and more cultured outlook on life, a more universal sympathy? We rejoice that our schools can point proudly to the long lists of those who have sought honour in defence of their country. Our boys are second to none in courage and unflinching devotion. The pity is that bravery and self-sacrifice alone will not win this war, and it is in our neglect of this fact that the deficiencies of our narrow and one-sided educational system stand revealed. There has been a tendency to glorify the development of the will, but at the same time to suppress the feelings and starve the intellect, at any rate in the case of the average boy.

It may be urged that our boys make splendid colonists; that our system of governing boys by boys turns out men who are unequalled for their tact and skill in dealing with less advanced races. But I would point out that the French have succeeded remarkably as colonists and administrators in North Africa, and that, recognising that their system of education was turning out a kind of intellectual proletariat, for which no suitable careers could be provided, they have adopted whatever features of the English system they could assimilate. The introduction of Rugby football into the French Army was only a sign of that passion for sport and outdoor life which has contributed so largely to the regeneration of France. So let us be willing to learn from our Allies if not from our enemies. We shall find that any possible reforms have already proved their worth in France. What does it matter if the Germans have also benefited by them? That is no reason why we should reject them.

There are two obvious reforms which should be introduced without delay. First of all the Board of Education should have the courage of its convictions, and should undertake more responsibility than it does at present. Even as now constituted, it is surely a better judge of what is right and proper in the world of school than governing bodies, made up for the most part of business men and clergymen, a by no means ideal combination of the worldly and the unworldly (or other-worldly), with scarcely ever a practical educationist among them. Above all, the Board should formulate a definite educational policy, and see that its inspectors carry it out. Such a scheme would, of course, always be subject to modification and revision. At present the inspectors' recommendations only add to the confusion which renders much good work unavailing. I could cite several instances where one inspector has recommended some particular syllabus or method, and his successor or senior has scouted the whole as absurd. If the victim submits without a murmur, it is good neither for him nor for the inspector. If the worm turns and protests politely but vigorously, he will be told that the Board only suggests and does not ordain! Some inspectors insist on neatness of work at any cost; others consider it a pure waste of time. And so we jig along, as merrily as may be, "and thus the whirligig of time brings in his revenges."

The second reform is an immediate improvement in the emoluments, status, and eventually the qualifications, in some cases, of masters in secondary schools. The increased cost must fall on the Government, for the local contributions have grown out of all proportion to the grants earned. The fact that we are at war and must cut down expenses in every way possible is no argument against more generous expenditure on secondary education. It is rather the strongest reason for spending money on what will improve more than anything else the efficiency of the nation, whether for war or for that great work of reconstruction which will follow the conclusion of peace. Does any business man suppose that the best men are being attracted into our schools, or that even the best men, working under the conditions of service and pecuniary rewards so ably described in the July number of *THE SCHOOL WORLD*, are able to do really efficient service for the nation? And, in conclusion, I will ask my readers whether they have ever estimated the increased cost of the war to us owing to our lack of an efficient and properly organised system of secondary education? Should we not already have saved many times the extra cost of such a system if it had been introduced twenty years ago?

W. H. LOVELL.

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The Teaching of Civics.

THERE are many signs that the present crisis will result in great educational changes. It has produced already a very strong and widespread idea of national unity, and great interest in national organisation for common purposes, and it has served to give our current political ideas (liberty, democracy, etc.) new meaning and fresh vitality. There is no doubt that a reaction on education will take place; in all probability we are at the beginning of a period when social organisation, social rights and duties, the value of national life, patriotism and its meaning, and so on will occupy a large place in our educational schemes. The teaching of civics, in the broadest sense of the word, will be regarded as of great importance.

I do not think that such a change will be opposed by anyone; I feel sure it will be welcomed by many teachers. But as soon as its nature begins to be understood the central difficulty (leaving out the question of overcrowded curriculum) shows itself; there is not a widespread tradition of teaching in such matters; it is only in late years that methods have begun to develop in the hands of the newer generation of teachers; even good text-books are few. A great deal of spade work must be done before we can talk with certainty as to details of method, etc.

It has seemed to my committee that the first step in promoting such a change as is outlined above is to get as much information as possible on present achievements. They believe that many teachers at present take opportunities given them by lessons on geography and history, and perhaps other subjects, to deal with the nature of social life and organisation, and some of its details in this country or elsewhere; literature lessons are used for the study of patriotic verse; many schools devote special periods to civics.

They would therefore be very grateful indeed to any teachers who will forward information as to the use they make of such opportunities as I have indicated, or as to any ways in which they deal with social organisation, national life, patriotism, etc. I need scarcely say that such information will in no case be published without the consent of the sender.

I hope that many teachers will feel able to help in this way in a task which is of great importance for our national future.

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The School World.

A Monthly Magazine of Educational Work and Progress.

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SIXPENCE.

JUNIOR TECHNICAL SCHOOLS

THE Junior Technical School is not exactly a new type, though the regulations under which it receives grant from the Board of Education have only been in force for a couple of years. It is the outcome of efforts during the last quarter of a century to provide for the industrial adolescent—the boy who will enter industrial life at or shortly before sixteen years of age. In the 'nineties these boys attended Higher Grade Board Schools, or the smaller Secondary Schools, and were often compelled by the custom prevailing in many of the skilled trades to leave before the completion of the full four-year course. When the Cockerton judgment in 1900 limited the sphere of action of School Boards, Higher Elementary Schools were established under a minute of the Board of Education. They were intended for boys between twelve and fifteen years of age, whose parents were unable or unwilling to send them to Secondary Schools, and they have not infrequently been regarded as a means of side-tracking the workman's child from higher educational facilities. But apart from this defect—real or apparent—there has often been a difficulty in avoiding a pseudo-secondary school curriculum and aim.

The educational inquiries which were carried out in many towns with a view of administering the Act of 1902, indicated the need of a type of school which should provide some more specialised instruction for boys who would not enter upon apprenticeship for a couple of years after the normal age of leaving a public elementary school. Remaining at such a school beyond this age often meant marking time; for the number of children of this type in any one school rarely justifies the expenditure on staff and equipment which further instruction requires. About 1905, therefore, the regulations of the Technological Branch of the Board of Education contained

a section offering grants, *inter alia*, in respect of younger students taking full-time day courses. The amount was limited to £3 for a course of 400 hours, and there were no particular conditions other than the requirement that the pupils must be exempt from attendance at a public elementary school. In actual practice, we believe, recognition was only accorded when the Board was satisfied that the work proposed could not be done under the elementary, higher elementary, or secondary school regulations.

In these circumstances, trade preparatory schools, as they were called, were very varied in character. Some were originally higher grade schools which had failed to become higher elementary or secondary schools, others were newly established in technical school buildings, and still others were created out of the first-year students in technical institutions who were too young for recognition under these regulations; but all had one feature in common: they devoted a larger amount of time to instruction in the workshop than had been considered advisable in previous educational experiments. Usually the allowance was from six to eight hours a week, but two—the manual school at Exeter, founded on the model of the American mechanical training schools, and the Stanley trade school at West Norwood, founded by Mr. Stanley, the well-known mathematical instrument maker—gave fifteen hours or more to this part of the curriculum. Obviously, this was done at the expense of science, mathematics, or English. A modern language was taught in two or three schools, but the practice was not general.

In 1913 the Board of Education issued its regulations for junior technical schools, offering a grant of £3 for pupils under thirteen, £5 for older pupils, with a possibility of increase to £7 "in respect of courses involving exceptionally costly methods of instruction." The pupils were required to attend for not less than thirty hours a week for two or three years,

and they should be in general between thirteen and fourteen years of age on admission. There must be a headmaster or headmistress, and the staff should not be required to teach for more than ten periods, day and evening, per week. While the school might be one of two or more institutions in the same building, it is clear that it is expected to be self-contained. A group of detached classes taken by teachers who happened to be available, and lacking organic unity, would fail to meet the requirements. Moreover, it must be conducted in such a way "as to encourage a corporate life and to afford opportunities for reasonable recreation, including, wherever possible, organised games."

During the session 1913-14 thirty-nine schools were recognised under these regulations, and two more have since been opened in Manchester, making forty-one in all. Of the forty-one, twenty-nine are for boys and twelve for girls, twelve of the boys' and nine of the girls' schools being in London. There are thus seventeen boys' and three girls' schools in the rest of England. In London there is a tendency to prepare for particular trades, and though in the provinces the aim is of a general character, the majority of the pupils enter some branch of engineering. As preparation for engineering and building involves practically no difference in curriculum, and as seven of the twelve London schools prepare for entry into these trades, this is obviously the type of widest interest.

The curriculum is not set out in the regulations, but in a provincial boys' school five or six hours a week would be devoted to English, five hours to mathematics, five or six hours to science (mechanics, physics, and chemistry), four or five hours to drawing, and seven or eight hours to workshop instruction in wood and metal. Some time is also given to physical exercises. Of these subjects, English has been placed first in the list because it is perhaps the most important and about which there appears to have been the greatest uncertainty. It includes economic geography, industrial history, and literature, but the value of the instruction in each section depends upon the qualification and interests of the teacher, and there is said to be a difficulty in obtaining men with the economic training necessary for suitable treatment of the first two. In science the instruction is not very different from that given to boys of similar age in municipal secondary schools, but the expressed intention of the pupils to enter industrial life, the prominence given to workshop instruction, and the fact that about half the members of the staff have had industrial experience, tends to give a more

practical character to the teaching. The mathematics is practical mathematics, and the drawing is geometrical, mechanical, and artistic. An attempt is made in the workshops to develop a wide familiarity with tools, materials, and processes, and to make adaptable and resourceful, rather than skilful, workmen.

While it will be seen that the training is of a general, rather than special character, there is a tendency towards specialisation by schools coming under the influence of a dominant local industry which absorbs the greater part of their output. Practically, schools are able to place the boys who have been through the course in their immediate neighbourhood, and this has led in at least one case to the adoption of a novel organisation. In order to avoid flooding the labour market at one period of the year, and to avoid also the tendency for boys to leave before they have completed the course, they are admitted twice during the session, so that there are two groups working on parallel schemes, but one a little in advance of the other. The groups complete their full courses at Easter and Midsummer respectively, Christmas not being a good time, as a rule, to secure employment. The absence of delay in starting work is a great boon to parents who have made considerable sacrifices to keep their boys at school for a year or two longer.

The junior technical school differs from a higher elementary school in four respects. It takes boys, as a rule, from thirteen years of age instead of twelve; provides, also as a rule, a two-year instead of a three-year course; gives six or eight hours a week workshop instruction instead of two or three; and puts them under a staff of whom about half have been "through the shops." The higher elementary school continues elementary education, and a junior technical school develops selected subjects of elementary education in such a way as to form a foundation for technical education. Contrasted with the secondary school, again, it admits boys at a later stage; keeps them for a shorter period; and in schools which are well established keeps a very large proportion of them for the full course. The secondary school aims rather at a maximum, and the junior technical school at a minimum age and standard of leaving. Preference for a two- or three-year course depends upon circumstances. In some respects the longer period is an advantage, but it must be remembered that a greater proportion of parents will be able to fulfil their promise to keep their children at school for two years than for three, and the last year is worth far more educationally than the first. Many secondary schools labour

under the disadvantage that while they provide a four-year course, the average duration of school life is less than three years, and it is obviously a gain to be sure of the majority of the pupils staying for a full course, even though it be of shorter duration.

But the junior technical school has another advantage in that the pupils are all preparing for occupations which are more or less cognate; and while the aim is not so narrow as in the old pupil teacher centre, it is still sufficiently definite to encourage the teaching of apparently diverse subjects upon converging lines. This statement applies not only to mathematics, to science, and to drawing, but also to English, in which geography and history can be so treated that, although they do not explain it fully, they create a mental background which responds sympathetically to the boys' future social and economic environment. The instruction thus achieves a certain coherence which is rarely possible in schools attended by boys with widely varying aims, and under the influence of a multiplicity of examinations. For in these, effort must inevitably be diffused over a number of parallel subjects which in various combinations are the *open sesame* to a university or one of the professions.

The schools were rather expensive to conduct when small because the nature of the curriculum necessitates specialist teachers. The same teacher cannot as a rule deal with both wood and metal work; there must be one man capable of teaching science and mathematics; and in a school of this type the teacher of English finds it difficult to give useful service in any other subject. But since the grant has been raised to £5 a school of 100 boys is fairly cheap, especially as a fee of 1s. a week or 15s. a term is usual. To the parent the cost of the education lies between that given in a higher elementary and a secondary school. But there is really no competition with them because both secure their pupils before they are old enough to be accepted in a junior technical school.

It is evident that we have here a type of school which meets the industrial circumstances of some towns more effectively than any other, and experience has shown that it can exist side by side with one or both of the others without any disadvantage to it or them. The only possible alternative lies in the provision of "technical tops" to certain elementary schools, to which pupils from other schools could be drafted to complete their education. In some places such a plan might answer very well. But it seems perfectly clear that while the problem of the industrial adolescent is widespread, different local

authorities will attempt to solve it in different ways. Some will prefer to extend the scope of their elementary schools, others will try to adapt their secondary schools, and an increasing number will avail themselves of the encouragement given under the regulations for technical schools. Upon the comparative merits of their methods we do not pretend to adjudicate.

HANDWORK AND MODELLING IN CONNECTION WITH THE TEACHING OF HISTORY.¹

By F. G. SNOWBALL, M.A., F.R.Hist.S.
Headmaster, Hele's School, Exeter.

THE cautious man enters with considerable hesitation that dangerous zone where the various school subjects meet and tend to react on one another; for the question of correlation is very difficult. Each subject has its own point of view from which alone its scheme of work should be graded. Any attempt at correlation with another subject involves the risk of a confusion of aims, and the subordination of one subject to the other.

But in this regard handwork is in a different position from other school subjects. Whatever may be thought of the purpose of school work in other subjects, it is quite certain that it is not the business of the manual training instructor to turn out little carpenters. Manual dexterity, skill in the use of tools, knowledge of technical processes, are of importance; but the educational value of the handwork course depends almost entirely on the extent to which it bears relation to the other activities and interests of the pupils. This fact, indeed, is the strongest argument I know for the fuller recognition of handwork in the school curriculum. There must be time for instruction in technique, and also for its application to the needs of the various subjects with which it can be correlated. The mutual benefits justify the additional expenditure of time. The handwork course gains through the provision of a powerful motive, in that the objects to be constructed arise naturally from the pupils' other activities. The correlated subjects gain through the interest roused by the appeal to the constructive faculties of the pupils, and through the reality given to knowledge which might otherwise have been merely verbal.

At the same time the handwork course must have a progressive scheme drawn up from its own point of view; and this is quite com-

¹ A paper read at the conference of teachers of history at Stratford-on-Avon in August, 1915.

patible with the introduction of models having relation to the other work of the school, if adequate time is provided. If the teachers of the various subjects indicate a number of models which would be of value to their work, the manual instructor can, without much difficulty, select those most suited to the capacity of the class from his point of view. In this matter, obviously, his decision must be final.

In what follows a large number of possible models is mentioned. Most of these have actually been made at various times by boys of the age to which they are here assigned, but it is not to be understood that the suggestion is that all the models mentioned should be made in any one year. Some of the smaller models, indeed, can, and should be, made by each boy, but, generally speaking, once a satisfactory model is made, it is made for all time, or rather until the ordinary process of wear and tear renders its repetition necessary. Of the larger models I do not look for the completion of more than one or two each year. These will become the permanent possessions of the school, and succeeding generations will benefit from them as illustrations, whilst themselves contributing to the common stock by making models to illustrate other aspects of their period.

The connection which can profitably be established between handwork and history is, of course, largely in the matter of illustration. The aid of handwork can be summoned most usefully in the difficult business of creating a realistic background to history. In the past, at any rate, too little attention has been given to the provision of an adequate historical background. History has been too exclusively the study of past events, to the neglect of past conditions. Yet the school study of history entirely misses its purpose unless it frankly subordinates the mere happenings of the past to a clear statement of the conditions under which men lived for long periods, and the ideas which they held.

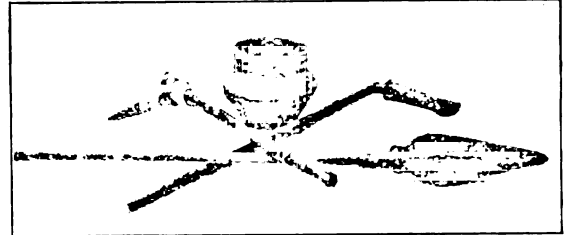
As an aid to the realisation of past conditions handwork is valuable in two ways. First, it enables the pupil to attempt first-hand solutions of some of the problems which conditioned the past; secondly, it makes possible the concrete illustration of past conditions.

The correlation of handwork with history can be carried as far as the handwork course itself goes; but it is obviously most suitable for the lower forms, where the time-table is least crowded, the natural interests of the children are most concerned with the material side of everyday life, and the wise teacher is more anxious to create true impressions of

past social and economic conditions, than to instil a knowledge of past events.

In my own school the history work of the lower forms is planned with the twofold object of creating a sociological and a European background for the course of English history, which occupies the time of the middle and upper forms.

The work is divided into four years, roughly corresponding to the ages from eight to twelve. The first year is spent in studying



Clay models of (1) Neolithic celt; (2) Socket bronze celt; (3) Bronze spear-head; (4) Bronze Age cinerary urn.

prehistoric times. The lessons are given in the form of stories about children who lived in the days before history—the Cave Dwellers of the Old Stone Age, the Pit Dwellers and Lake Dwellers of the New Stone and Bronze Ages. Here the correlation with handwork is natural, if not inevitable. The club, the sling, the bow and arrow, arrow-heads, axe-heads, spear-heads, borers, scrapers, hand-moulded pottery, baskets, spindles, looms, bone-needles, and so on, are attempted by the children almost spontaneously. When they succeed their delight is unbounded; when they fail, as in the case of the stone and bronze implements, their disappointment helps them to realise something of the skill of primitive man.

The materials for most of these articles are brought from home by the boys, some of whom are indefatigable in their search for stones the natural shape of which resembles the implements they find themselves unable to shape by chipping. The materials provided by the school are clay, cardboard, and light strips of wood. From the clay they fashion pottery similar to that of primitive man, and models of the stone and bronze implements, which they joyfully fit into the hafts.

Besides these individual models they make several co-operative models representing typical scenes, such as Stonehenge, round barrows, long barrows, a group of pit dwellings, a group of wattled huts, a lake dwelling, each in its appropriate landscape setting, using clay, cardboard, wooden strips, and all sorts of miscellaneous materials found suit-

able for the purpose. Many a pleasant half-holiday, too, is spent in digging real pit dwellings in the school field, and playing at living in the New Stone Age.

In the second year the history concerns itself with Ancient Egypt, Mesopotamia, Palestine, and Phœnicia. Using the same materials as in the first year, the story of ancient oriental civilisation, centred round the lives of typical children, is illustrated by models of houses, palaces, temples, tombs, pyramids, mummies, funeral boats, granaries, ploughs, shadoofs, hoes, sickles, chariots, weapons, the Tabernacle, the Ark of the Covenant, Solomon's temple and its appurtenances, Phœnician ships, and various typical scenes from the domestic life of the Orient, *e.g.*, a feast, grinding corn with a hand-mill, and so on.

The work is also correlated with the art course, which includes the drawing or relief modelling of typical scenes from the wall-paintings and reliefs of Egypt and Babylonia—agriculture, war, lion hunting, and so on; as well as the copying of hieroglyphics and the reproduction of cuneiform writing on clay tablets.

During the third year the stories of Greece and Rome are surveyed briefly, with special stress on social life and conditions. The possibilities for correlation with handwork are innumerable, both for individual and co-operative work. Greek and Roman body armour (made from pieces of linoleum and old felt hats); Greek and Roman swords, spears, and shields (made from wood and cardboard); Roman standards, and lictors' fasces, at once suggest themselves, as well as the various war engines used in siege operations. For larger co-operative models there are so many possible subjects that the chief difficulty is that of selection. The Greek house and the Roman house seem to demand first attention; but, though complete models of the Athenian Acropolis, Olympia, or the heart of Rome, are perhaps out of the question, one would like to add at least rough models of the Parthenon and the theatre of Dionysius, of the Colosseum, and the Circus Maximus; while Greek and Roman ships, Roman walls, aqueducts, camps, and frontier forts, such as the Saalburg, would repay reproduction.

The work of the fourth year deals in outline with European history from the Folk Wandering onwards. The number of possible models is legion, and rather than enter upon a mere enumeration of them I propose to deal with the Middle Ages in some detail in order to illustrate the method by which the social life of a period may be made more real to the pupil by correlation with handwork.

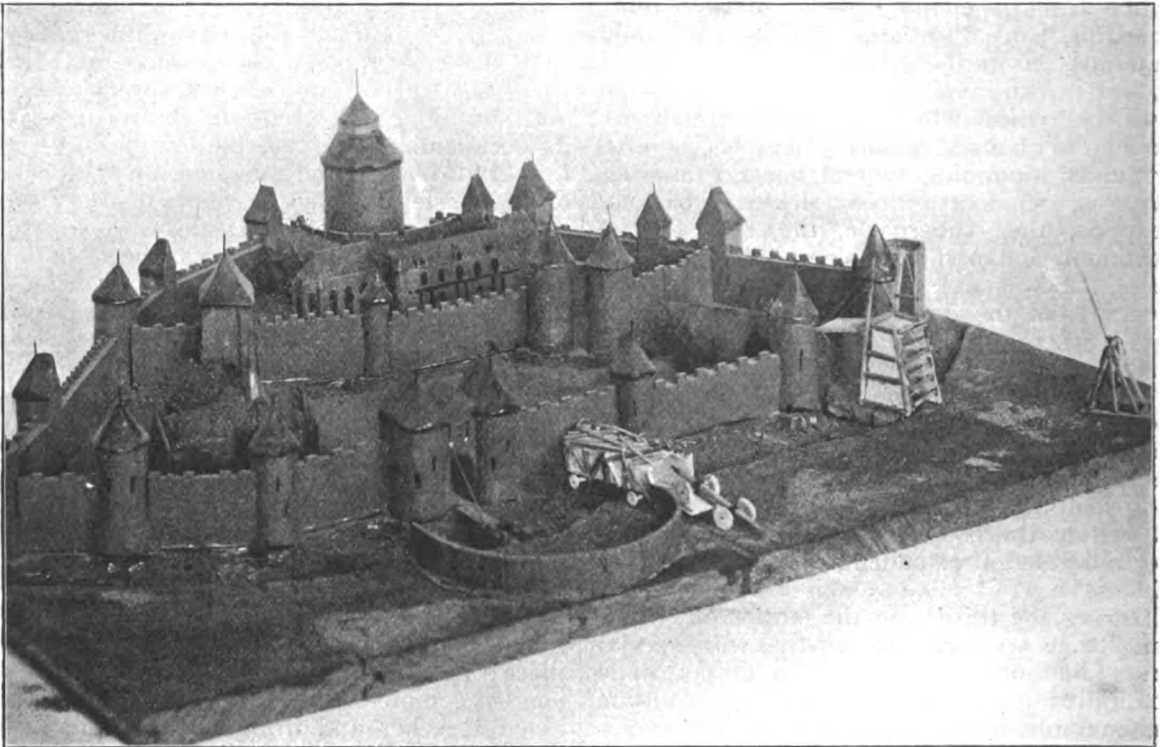
If children are to gain any real idea of the Middle Ages, they must be introduced to the citizen, the villein, the feudal lord, and the monk. A plan which has been found to work successfully is to make the teaching centre round a typical defensive site, such as a steep-sided, river-girt hill, crowned by the castle of a feudal chief, under the shadow of which there has sprung up a town, protected by, and supplying the needs of, the fortress and its occupants. Near by, the munificence of a former lord has reared the church and cloisters of a monastery, whilst the whole district forms the fief of the lord of the castle, whose vassals hold the neighbouring manors, the lord himself being the vassal of some duke, who, in turn, is the vassal of the king. Episodes typical of every essential phase of medieval life can be woven into the story as the lessons proceed. In the handwork lessons, a model of the castle is constructed, each boy being given some portion to make, with definite instructions as to measurements to be observed. Soon the different portions—gatehouse, barbican and drawbridge; donjon, hall and chapel; stables, towers and curtain walls—are completed and ready to be assembled on the base-board on which the plan of the castle is drawn. Each boy sets up his portion in its appointed place; the final fitting and adjusting is at length completed; and the whole castle is glued together and firmly fixed on its base. By this time the story will have brought the lord of the castle into conflict with his feudal superior, who will presently arrive before the castle walls to besiege it. As the siege progresses—and the boys will not mind how many lessons the fighting is spread over—the handwork lessons will be occupied in making models of medieval siege engines, the "cat," the "belfry," the battering ram, the mangonel, the trébuchet, and the rest; and perhaps large models of the keep and the hall to show the interior arrangements, and of the gatehouse and the adjoining curtain, to show the working of the drawbridge and portcullis and the constructional details of the hoardings.

Similar models of a medieval town, a monastery, and a manor can be made, each illustrating some part of the story. If town and monastery are made on the same scale as the castle, they can all be set into their proper relative positions in a portion of the school grounds, which has been roughly shaped into a relief model of the district.

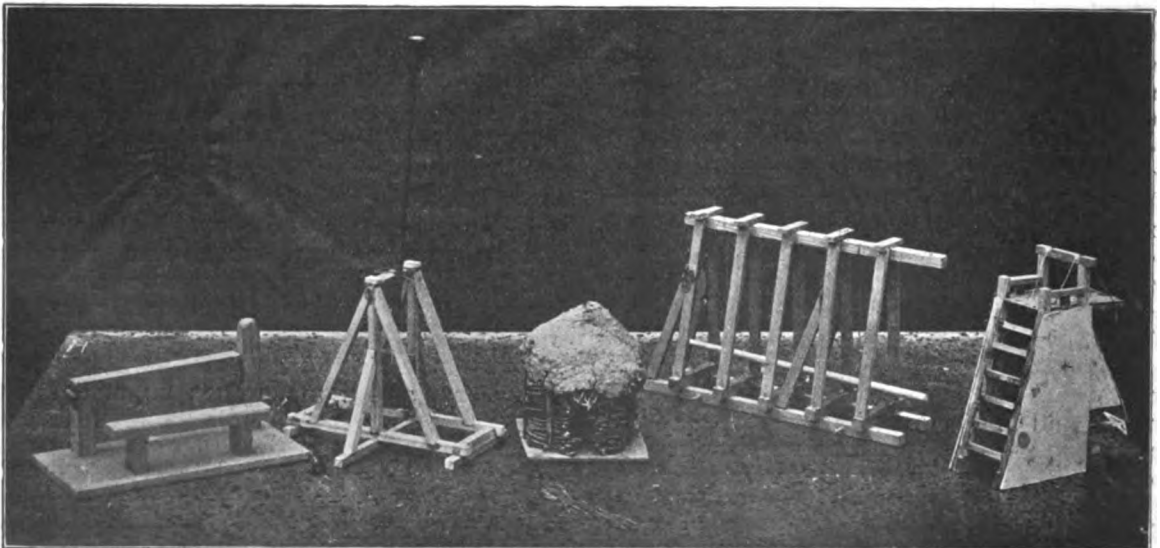
The manor is a simpler model than the castle or the monastery. A good plan is to have the ground-plan painted on a sheet of American cloth, showing the "open fields" divided into acre strips, the demesne, the meadow, waste and woodland, the village

street, the sites of the various buildings, the stream, the pound, and so on. While this is being done by one or two of the best boys, the others should each have a building to make—

the plan, and on it can be followed the doings of the lord, the bailiff, the reeve, the hayward, the woodward, the pinder, the miller, and the rest. The whole story of medieval village



The castle of Rochepont. Based on the plans and pictures in Viollet-le-Duc's "Annals of a Fortress."



Stocks.

Trebuchet.

Wattle hut of Neolithic and Bronze Ages.

Battering ram.

"Belfry," or siege-tower.

the manor house, the windmill, the water-mill, the church, the bridge, the inn, the lord's oven, the houses of the various villeins. When these are all finished they can be set out on

life can be made intelligible in this way, and the history of the manor can be traced through the centuries in such a manner that such terms as villeinage, commutation, enclosures, etc.,

come to have a real meaning. Incidentally, this model throws light on an interesting point in historical arithmetic—the origin of our land measures of length and area.

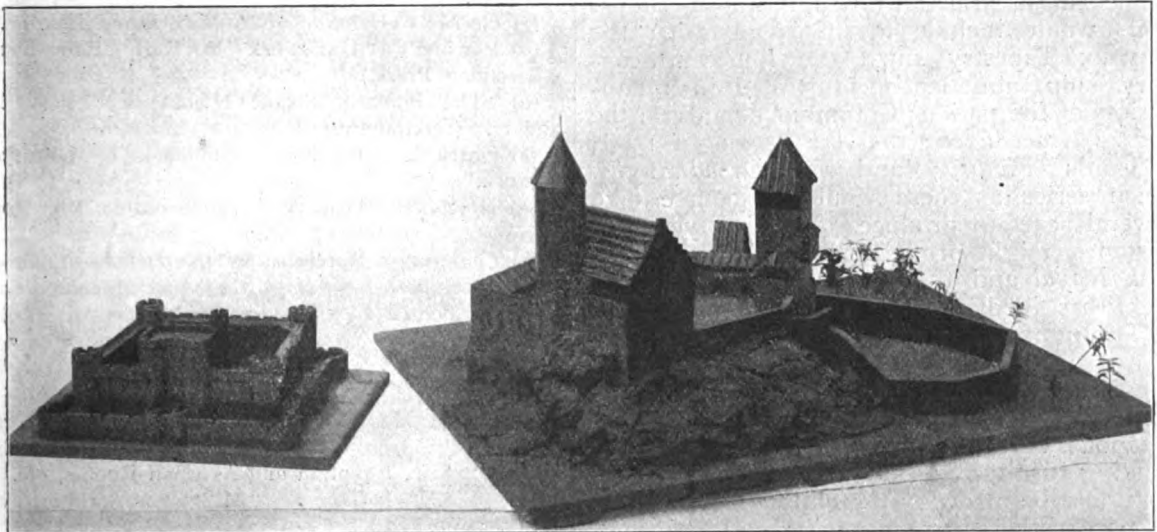
In the town model, the chief features to be represented are the walls, the gates, the bridges, the churches, the guildhall, the market place and cross, the high street, and the various lanes occupied by the members of the different crafts—Mercery Lane, Milk Lane, Butcher Row, Goldsmith Street, and so on. When a connection with local history can be established, so much the better.

The model of the monastery can be made the opportunity for stimulating an interest in ecclesiastical architecture. I have known a class of boys to be thus inspired to devote a whole holiday to the enthusiastic tracing of

tion of monastic ink, which he then proceeded to make and use in producing a very respectable imitation of a medieval manuscript.

The Middle Ages could hardly be regarded as adequately illustrated without some attempt to reproduce its costumes, weapons, and armour; and girls will derive as much satisfaction from dressing dolls to illustrate the evolution of costume, as boys will from tracing in a series of models the evolution of the helmet, the shield, the weapons, and the body armour of the medieval warrior.

When local circumstances are favourable, the inspiration for some historical models may well be sought in local antiquities. An interesting example of the value which may attach to such work may be seen at the Armstrong College, Newcastle-on-Tyne, where some of



Harlech C. ste.

The Kogelburg.

the architectural history of Furness Abbey; whilst many individual boys have shown that the interest has become a permanent one by their letters giving accounts, illustrated by picture postcards, of their visits to churches and abbeys in other parts. The same is true of the work done on castles. One boy, for instance, on leaving school, made a European tour, during the whole of which he inundated me with postcards of French and German castles, and his observations about them. Every holiday brings further evidence of this kind.

In connection with the lessons on Monasticism, the work of the scriptorium provides an opportunity for correlation with the art work. The sight of an illuminated manuscript invariably sets some boys to work at illumination. I remember one enthusiast who made exhaustive inquiries as to the composi-

tion of monastic ink, which he then proceeded to make and use in producing a very respectable imitation of a medieval manuscript.

This scheme can, of course, be modified to meet the needs of those who prefer to confine themselves to English social and industrial history by the omission of the second and third years of my course and the expansion of the fourth year on the lines of Miss Spalding's two books in the Piers Ploughman series (Philip).

The correlation with handwork may also with advantage be continued to a limited extent beyond the stage to which I have carried it here. Such handwork appeals to boys of twelve to fifteen with considerable force, and offers an extensive field for research work of

an elementary kind. For instance, a set of models might be made to illustrate the evolution of the fortified place in England—the stockaded earthwork surrounding the bailey, with its motte crowned by a wooden tower; the replacement of the wooden structures by stone wall and keep; the influence of the Crusades as seen in the Château Gaillard; and finally the elaborate Edwardian concentric castle as seen at Beaumaris, Harlech, and so on. This might be followed by models of such places as Bodiam Castle, Compton Winiates, Fountains Hall, etc., to illustrate the gradual abandonment of the idea of defensibility in favour of comfort as the first consideration—concrete proofs of the growth of respect for law and order which resulted from the activities of the New Monarchy.

Another evolutionary series suitable to this stage might illustrate Britain's Sea Story. This would include the Gokstad ship; the Bayeux Tapestry ship; the fourteenth-century ship, abundantly illustrated in manuscripts of the period; Columbus's caravel; the *Harry Grace Dieu*; the *Ark Royal* of 1588; Nelson's *Victory*; and the *Dreadnought*. Such series as these would of course take several years to produce. The first year, for instance, might produce the Viking ship, the *Ark Royal* and the *Victory*, while succeeding years filled in the intermediate stages.

Throughout all stages the connection between historical handwork and the dramatic method of teaching history is so obvious as scarcely to need mention. The armour, weapons, costumes, and other accessories, including furniture, needed for the plays, would naturally be made by the children themselves as part of their preparation for a play of their own composition.

One result of such a scheme of correlation as I have outlined should be, a useful collection of permanent historical models for use as illustrations; for the value of the models does not cease with the making. The boys who have actually made a model will, of course, have an imperishable recollection of the details which they worked out in connection with it; and will be, so to speak, specialists on that particular aspect of their period, but the model will also have a value for other boys simply as an illustration, used as we use a picture, but conveying a more adequate impression because it exists in more than one dimension, and, sometimes, because it "works." Another result should be a lively interest in social history and conditions; a third, the concrete definition of much knowledge which would otherwise have been mere verbiage; and a fourth, a valuable background of past conditions before which the

political events studied in later years will be enacted with an added significance and reality. Finally, if care has been taken to select models illustrating various phases in the evolution of certain essentials in human progress, this historical background will have a vastly enhanced value. The pupil will, for instance, appreciate and realise those evolutionary series at one end of which are the picture-writings of Ancient Egypt, the dug-out canoe, the digging stick, the bow and arrow, the cave, of prehistoric man; and at the other the marvels of the modern printing press, the Atlantic liner, the steam plough, the magazine rifle, and the house in which he lives. He will, in fact, have some definite notions of the process by which human conditions have reached their present-day complexity.

A LIST OF USEFUL BOOKS.

(1) *On the Correlation of Handwork and History.*

(a) Plaisted's "Handwork in Early Education." (Clarendon Press.)

(b) "The Book of School Handwork." Vols. iii. and iv. (Caxton Press.)

(c) Harrap's "Teachers' Handbook to Dramatic History."

(d) Harrap's "Teachers' Handbook to the Dopp Series."

(2) *Containing Materials for the Details—Pictures, Plans, Reconstruction, etc.—Needed for Model-making.*

(a) Parmentier's "Historical Albums." (Colin, Paris.)

(b) Luckenbach's "Kunst und Geschichte." (Leipzig.)

(c) British Museum Guides to Stone Age, Bronze Age, Early Iron Age, Greek and Roman Life, Egyptian Life, Egyptian and Assyrian Rooms, etc.

(d) Viollet-le-Duc's "Military Architecture." (Parker, Oxford.)

(e) Viollet-le-Duc's "Annals of a Fortress." (Parker, Oxford.)

(f) Various Local Guides: e.g., to Kirkstall and Fountains Abbeys, Ludlow Castle, etc.

(g) A. Hamilton Thompson's "Military Architecture in England and Wales." (Clarendon Press.)

(h) H. A. Evans's "Castles of England and Wales." (Methuen.)

(i) A. Mau's "Pompeii, its Life and Art." (Macmillan.)

(j) Wilkinson's "Ancient Egyptians."

(k) Robinson and Breasted's "Outlines of European History." Part i. (Ginn.)

(l) Tappan's "In Feudal Times." (Harrap.)

(m) Various volumes in Methuen's "Antiquary's Books."

(3) *Books Containing Suitable Materials for Stories.*

(a) "The Cave Boy." (Harrap.)

(b) "Days before History." (Harrap.)

(c) "Threshold of History." (Harrap.)

(d) "The Dopp Series." (Harrap.)

(e) Kemp's "History for District and Graded Schools." (Ginn.)

- (f) Bulley's "Ancient and Medieval Art." (Methuen.)
 (g) Jane Andrew's "Ten Boys on the Road from Long Ago to Now." (Ginn.)
 (h) E. Nesbit's "Story of the Amulet," etc. (Hutchinson.)
 (i) Miss Gardiner's "Friends of the Olden Time." (Arnold.)
 (j) Hall's "Life in Ancient Greece." (Harrap.)
 (k) Viollet-le-Duc's "Annals of a Fortress." (Parker, Oxford.)
 (l) Andrews's "Lord's Men of Littlebourne." (Harrap.)

THE WEIGHT OF SCHOOL BOOKS.

By ETHEL GAVIN, M.A.

Headmistress, Wimbledon Hill School, Surrey.

FOR the last ten years a new worry has been added to the considerable load already carried by the headmistresses of day schools, and inasmuch as this is a preventable worry I have hopes that the mere statement of it by one of them may do something towards its removal. (I speak of headmistresses and girls merely for the sake of convenience; all that I have to say is equally applicable to boys.)

We are all aware that for some years of a girl's life—the growing years—a very little cause is sufficient to induce a habit that may have a most serious influence on her development, and that it is in the early half of the teens that the straightness of back and limb that makes for permanent good health is achieved. Every school doctor has probably had a case of curvature of the spine which has been traced to violin practice and the consequent habit of raising the left shoulder; and I fear I must add that every school doctor has had more than one case of curvature traced to the fact that the girl has formed the habit of carrying her school satchel always on the same side. Now, mistresses may make rules as to the satchel arriving at school in the right hand and leaving school in the left, but girls are girls, and the satchel very quickly and unconsciously reaches the hand which finds it most comfortable. It is for this reason that the weight of the same satchel becomes a matter of urgent interest to those responsible for a girl's welfare.

The elements that go to make up the weight of the satchel are:—

(1) The schoolgirl's ingrained propensity for carrying all her property backwards and forwards daily. For this the only remedy is an appeal to her own common sense.

(2) The composition of the satchel itself—in which matter parents should exercise much more authority than they do, *e.g.*, the unfashionable canvas satchel is much lighter and

more suitable than the fashionable leather attaché case.

(3) The contents of the satchel, viz., printed books and paper necessary for homework, pen and pencil, knife, indiarubber, compasses. Here the school can do much and has done much. Have we not abolished the exercise book in large measure, so that the only paper carried is that required for the task of the day? Have we not done something to bring about the substitution of the soft, light, leather pencil-case for the huge, heavy, and noisy wooden, or metal, box? But as regards the printed books—the heaviest item of all—we are more or less at the publishers' mercy, and less and less mercy do some of them show us.

For a good many years now I have always taken the weight avoirdupois into account in adopting a new book for class use, and I have no hesitation in stating that every year it becomes more difficult to find good modern textbooks that are suitable in weight for use in day schools. This is notably the case in subjects such as geography and history and in the readers wanted by the youngest children of all. Where four to five ounces used to be a common weight for a school book, one now finds eight to ten. It is easy to test this statement. Three to five books are required as a rule for homework for girls over twelve years of age, so that the weight of the satchel for books alone works out at anything from a pound and a half to two pounds.

So far I have been considering the disadvantage, the serious disadvantage, of the increasing weight of school books, but I must turn now to the other side. My expostulations with publishers' representatives are always met by the answer that the weight is due to the goodness of the paper used, and that this good paper is necessary in the interests of eyesight. To this I rejoin that it is certainly just as important to avoid injury to a child's eyesight as to its spine, but that books do exist that combine good paper with light weight, and it is those that I want to encourage. Then I am told, "Yes, but you cannot get them at the same price," and I always feel that then I have touched bed rock, and that there lies the real cause of our new affliction. Without knowledge of paper manufacture, and in spite of appearances, I make bold to declare that the heavy, showy, highly-glazed paper that splutters as it burns, is cheap paper, that therein lies its charm to the publisher, and that therein lies the sting to those of us who have the care of children. Of course the price of school books is a most important consideration—especially in war time—but it is never as important as the children's health. It is better

to pay a few pence more each school year than meet the cost by a crooked back.

Two other pleas are put forward at times in defence of the modern paper, and I may add of the heavy binding which is entailed by it. I am asked to notice how artistic the "get up" of the book is—and I admit it, but think this of no importance at all compared with the drawback—and further I am told that this paper alone makes profuse illustration possible. If that is so I am willing to forgo illustrations in nine cases out of ten. I do not know that I have ever examined a school book where I have not thought some of the illustrations worthless, either because of their inferiority, or because the very small scale of the reproduction makes the observation of details impossible. In geography books, diagrams and maps illustrative of a definite point may be of great value and even essential, but it is not those that entail the use of the heavy paper, *e.g.*, a well-known book of my own youth, Huxley's "Physiography," gave all that was necessary on paper of a reasonable texture. I believe all illustrations would be much more profitable if of a size suitable for class use, and that the counsel of perfection would be to have each issue of a new text-book accompanied by a portfolio of large-scale illustrations for display in the class room. Probably the cost of this would be prohibitive. If so, let us remember cheerfully that, after all, the children have imagination (to which the illustrations often bring a shock), and that light paper with no illustrations is a better alternative than heavy paper, even with illustrations, if they eventually lead to curvature of the spine.

PROBLEMS OF THE "FREE-PLACER" IN SECONDARY SCHOOLS.

By A HEADMASTER.

MUCH has been said and written on that thorny subject the "free-placer" in our secondary schools, but I doubt whether even a few of our headmasters and headmistresses will say that the free-place system is an unqualified success. Some dislike the free places, others tolerate them, whilst just a few welcome them; the latter class is, I believe, gradually increasing.

That there should be some scheme whereby the bright and clever children of poor parents should have opportunities for higher education will be denied by no one, but that we have found the best system of selecting these children is denied by many, and amongst these are the heads of primary schools from which these pupils are drawn.

The method of selection adopted, for instance, by the Middlesex Education Authority

is very thorough, and is carried out with great care, but I doubt whether the object of awarding the free place to the boy or girl is achieved in anything like the number of cases that it should be. Many leave school at the end of a three years' course, when they have reached the third form. These pupils are then nearly sixteen years of age, and "it is time they should earn something." The large majority become poor (in more senses than one) clerks. They leave with a determination to "finish their education" in an evening continuation school, but, as a responsible master of one of the largest evening commercial schools in London, it became evident to me that, whatever becomes of the youth between the ages of sixteen and nineteen, comparatively few of them are to be found in the evening continuation school; when they do attend it is evident that the ability is not wanting, but the number of attendances is seldom high. One valuable asset has, however, been gained by the free-placer—he can say that he has been "educated" at a secondary school.

These facts lead naturally to a consideration of the age of the free-placer on admission to the secondary school. Consider a typical school:—

Number of free places awarded in 1912: boys, 24; girls, 10.

Average age on admission: boys, 12 years 6 months; girls, 12 years 5 months.

Number leaving in 1915: boys, 12; girls, 6.

Eighteen out of thirty-four have therefore left at the end of three years.

Consider the previous year:—

Number admitted in 1911: boys and girls, 22.

Number who have left on or before 1915, 14.

The fact that more than half of our free-placers leave after a three years' course suggests that the present admission age is too high, and that a better result would be obtained if the age on admission were made eleven years instead of thirteen years. In most cases this would mean a five years' course to Matriculation standard, instead of the present three years' course to the Middle School.

One can sympathise with the head teachers of the primary schools at the loss of their brightest pupils, but it is satisfactory to note that many head teachers now recognise that the greater the number of their pupils who gain free places the greater is the credit due to their school. The local education committees, too, give the credit where it is due; in fact, some education committees extend the number of free places beyond the compulsory 25 per cent.

The free-placer having now entered the secondary school, there is not the slightest need

for any further reference to be made to the charitable side of the free place. Indeed, in some districts these are called "scholarships," which certainly savours less of charity. The Head alone needs to keep a record, and can avoid any further reference to the free place pupil as such in dealing with such matters as fees and fee-bills.

It soon becomes apparent, however, that some of the new pupils are not enjoying all that the school offers. The cost of the hockey stick or the tennis racket may be prohibitive, and many a hard-working parent, who never owned such a luxury, will look upon the expense as quite unnecessary. In this way it is brought home to the free pupil that there is a difference somewhere. It is seldom found that a fee-paying pupil lacks any of these luxuries. The free-placers will be missed from the weekly swimming lesson owing to the expense of fares and the cost of admission to the baths. Later they may fail to obtain a place in the match teams, again owing to the expense, often a shilling or more, incurred in visiting a distant school. It is thus brought home again to the free-placers that there is a difference between them and their comrades, and the result, although not often very noticeable, is at the same time very serious. In schools in which the "house" system is adopted, considerable pressure is brought to bear upon the apparent "slacker" by the members of the house to which he, or she, is attached. The various social functions in connection with the school cost something, and in some cases the cost is again prohibitive.

I do not wish to affirm that this state of affairs is general in the case of free-placers in any school, for there are a large number who appear to lack nothing that the fee-paying pupil has, but, from my own observation, the number who do suffer through lack of funds is considerable.

It has been suggested that, to obviate these difficulties, the free place should carry a small money grant sufficient to cover these expenses, and that this grant would give all the benefits of the social life of the school. I do not think, however, that this would be a satisfactory solution unless the money were placed in the hands of the governors to be used at the discretion of the Head. Such a grant to all parents of free-placers is unnecessary, for, if the grant were made to parents, the pupils who needed it most would not benefit to any great extent; these parents would still consider the expenditure on "luxuries" unnecessary.

Now these free-placers are worthy of every consideration. At first they may appear to lower the tone of the school, and they certainly will do so if they do not receive due

consideration; but it is just as certain that they will raise the tone if they are handled with care.

Most of the free-placers are to be found in the upper division of their year; they attend with the greatest regularity (except in the cases of a few mistaken awards), and they make their influence felt, especially when they stay to reach the higher forms of the school. The majority of my prefects have held free places.

In giving the figures above, it must not be inferred that our upper forms consist mainly of fee-paying pupils; more than 60 per cent. of the two upper forms in this school pay no fees. All these pupils hold free places or junior scholarships—the latter carries a maintenance grant—and this is by no means a high percentage when compared with other schools in Middlesex.

My plea, however, is for that half of the free-placers who leave after a two or three years' course—a serious loss, and one which might be avoided. If the age at the time of award were not over eleven, and if some grant were made on some such lines as indicated above, the free-placer would, at any rate, have the opportunity of enjoying the full benefits of the social life of the school.

There is one other point which I think has a very important issue. The large majority of the elementary teachers of the future will be drawn from the ranks of the previous free-place holders. Bursaries are awarded at about the age of 16½, but it is evident that, with the admission age at or about 13 years, the bursary cannot be taken up until the pupil reaches the age of 17½ years. This makes the age on leaving the training college about 22, and there are few parents who are willing to maintain their sons and daughters for so long a period.

It is sometimes argued that these bright pupils should be able to matriculate in three years after admission, but while experience shows that an occasional pupil can and does matriculate in four years, most heads would agree that five years should always be allowed, especially in the case of girls, if this examination is to be taken without undue strain and with the best results mentally and physically.

In these serious times little attention can be given to the supply of teachers for our primary schools, but we all know that there is "something wrong" with this supply. Applications for bursaries from boys are few and far between (I have received two since the bursar system has been in force), whilst applications from girls are dwindling year by year. The outlook is serious, for no one will deny that the future of our nation is largely in the hands

of our primary-school teachers. I maintain that there would be no lack of recruits from the ranks of our free-placers if their enlistment were made a possibility. The question naturally arises: Is it worth while to become a teacher?

In many secondary schools the head has found it advisable to develop a commercial side at the top of the school. Consider the case of a girl—the boy does not count, for, owing to the poor prospects, there will be no applicants except from those who are unfit for anything else—who from 16 to 18 years of age pursues a commercial course of study. A small number of subjects are taken intensively; she becomes a very good shorthand-typist (and these are rare); she spends two periods, each of about two months, in France, as an “exchange,” and gets a really workable acquaintance also with French—a somewhat rare qualification amongst pupils leaving our secondary schools; her other studies have a commercial trend. At the age of 18 this girl can easily command a commencing salary of 25s. per week, with good prospects of advancement; and she is free from all the anxieties of the young teacher in training. Now elementary teaching is undoubtedly a good profession for a girl, and if we are to get the best material we must begin early. There is no lack of those who desire to become elementary-school teachers, especially amongst the free-placers in our schools, but they must be helped and cared for at the right time.

The heads of secondary schools can do much if they will obtain the confidence of the parents of the free-placers, and it is remarkable how eager these parents are to advise. They will lose none of their dignity by discussing the more private affairs of these parents, and I know that they will be in a position to see that the boy or girl lacks nothing that the fee-paying pupil enjoys. It takes much valuable time, but the reward is sure.

PERSONAL PARAGRAPHS.

A MEMBER of the Old Millhillians' Club writes of the late Sir James Murray, who was for some time a master at Mill Hill:—“Memories of some schoolmasters we put away with other childish things; but Dr. Murray was a man who left his mark. To youngsters, perhaps, he seemed too solemn; perhaps he lacked humour; but often enough a good story would come in to brighten some desolate tract of educational country. It was a school tradition that he was ‘just like John Knox’; but there was nothing of the dour or puritanical Scot about him. The long grave face would beam with a responsive smile at

any display of intelligence or interest in work. He was not as other assistant masters. His age, reputation, and personal dignity made him almost another ‘Head.’ Was he not ‘the’ man on English? And even the dullard is proud of being taught by a real authority. Besides, he lived and had his being in the halo of the great Dictionary—or rather he was the Dictionary; and the pencilled word-slips that swarmed from his books and pockets in every spare moment seemed to be just the overflowings of his big brain. Even his indifference to football and cricket could not cancel that impression. Yet he was human; and sometimes in his enthusiasm for his subject he fell a victim to

One of those small misguided creatures
Who, though their intellects are dim,
Are one too many for their teachers:

and a well-simulated desire to learn the derivation of some difficult word, or the truth about some disputed point in history, might decoy him from the discovery of an ill-prepared lesson.

* * *

“SIR JAMES MURRAY’s older pupils will never forget his stern insistence on adequate proofs; his unwearying attention to details; his honest impartiality in judging doubtful questions, and much else in his teaching, through all of which a strong personality showed and glowed. They went away from his class-room with a clear impression of the wholesomeness not only of honest work at school, but of industry and rectitude in every department of life.”

* * *

GEOGRAPHICAL science and education have suffered a severe loss by the death on July 31st, at fifty years of age, of Dr. A. J. Herbertson, professor of geography in the University of Oxford. Twenty years ago Dr. Herbertson succeeded Mr. H. J. Mackinder as reader in geography at the University; and to his work and influence since that time are largely due the great improvements which have been effected in the training of teachers of geography, and the recognition of the claims of geographical instruction to an important place in education from school to university. The Oxford School of Geography was established in 1899, under a joint committee formed of representatives of the Royal Geographical Society and of the university; and while Dr. Herbertson was director it worthily upheld the position of geographical education. The school is not only renowned for studies of prime importance in branches of geography regarded particularly as scientific, but also for the attention given to the human, historical,

and political aspects of the subject. It has accomplished great work with slender means, and has built up a collection of maps and other materials which any university would be proud to possess. In recognition of the position thus secured by the school for geography, the university established a professorship of the subject in 1910 and appointed Dr. Herbertson to the chair, which, however, still awaits adequate endowment.

* * *

DR. HERBERTSON was the author of a number of books and other works on geographical subjects for use in schools; and his more substantial contributions include an "Atlas of Meteorology" (with Mr. J. G. Bartholomew), "The Distribution of Rainfall over the Land," and the "Oxford Survey of the British Empire" in six volumes, with Mr. O. J. R. Howarth. He was president of the Geographical Section of the British Association in 1910, and was a member of the Royal Commission on Inland Canals and Inland Waterways, 1906-1910. His death at a relatively early age will be deeply regretted in both educational and scientific circles.

* * *

WITHIN a fortnight of Prof. Herbertson's death, on August 15th, Mrs. Herbertson died suddenly. Mrs. Herbertson, who was formerly on the staff of Cheltenham Ladies' College, was well known in connection with her school books on geography, some of which were written alone, and others in collaboration with her husband.

* * *

AFTER thirty-four years' service, Mr. S. Leigh, J.P., has resigned the headmastership of the East Anglian School, Bury St. Edmund's. Mr. Leigh was appointed within a year of the foundation of the school, and its present prosperity is the fruit of his labours. He is succeeded by the vice-master, Mr. W. Newman, who was formerly headmaster of Trowbridge High School.

* * *

MADAME BERGMAN OSTERBERG died on July 29th at Kingsfield, Dartford. Madame Osterberg, who was the recognised head of the Swedish Physical Training movement in this country, was a Swede; she came to this country in the 'seventies; in 1880 she became superintendent of the physical training department of the London School Board, and in 1885 opened at Hampstead the first college in Britain for training teachers in Ling's Swedish System. Ten years later Kingsfield was opened and the main work of training was carried on there in ideal sur-

roundings, while the college at Broadhurst Gardens was handed over to two of Madame's pupils, who continued some of her work there. The curriculum, always scientific and progressive, continued to develop, and one of the latest additions to the college was a laboratory for research and experiment. Madame Osterberg wished to secure the continuation of her work, and, with the consent and sympathy of her husband, Dr. Osterberg, and under the advice of the Board of Education, vested her property in a trust with the object of carrying on the college in the national interest on its existing lines.

* * *

THIS is but a final instance of the purposefulness and generosity of Madame Osterberg; she was a woman with a definite purpose—the betterment of everyone with whom she came in contact, and especially of women. Large numbers of educated women passed through the college—to some it is no exaggeration to say she gave prolonged life and health, and to many a remunerative profession. Madame Osterberg was a woman of strong character, clear judgment, keen insight, and great energy. To meet her was a tonic, and to know her a valued privilege.

* * *

CAPTAIN R. S. DURNFORD, 9th King's Royal Rifle Corps, was killed in Flanders on July 31st. He was educated at Eton, where he was captain of the Oppidans in 1904-5, and afterwards a scholar of King's College, Cambridge. After holding a mastership at Lancing College for a short time he became a master at Eton, where he was a captain in the O.T.C. On the outbreak of the war he joined the King's Royal Rifles with a similar rank.

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SECOND LIEUT. P. POWELL, 3rd Rifle Brigade, was killed in action in France on August 2nd. He was educated at Dulwich College and King's College, Cambridge. Mr. Powell was formerly a master at Bradford Grammar School, at Eltham, and at Loretto; in 1906 he went to Wellington College, whence he obtained a commission in the Rifle Brigade and went to the front early in June.

* * *

LIEUT. G. E. GRUNDY, 9th Royal Warwickshire Regiment, who was killed in the trenches in the Dardanelles on July 22nd, was the younger son of the late Rev. W. Grundy, headmaster of Malvern College, and of Mrs. Grundy, School House, Abingdon. He was educated at Malvern College, and at Brase-

nose College, Oxford. For a year he was a master at Pocklington School, and while there played cricket for the Yorkshire Gentlemen. He was appointed a master at Haileybury College in 1908, and housemaster of "Batten." He was an officer in the O.T.C., and received his commission a year ago.

* * *

MR. T. R. N. CROFTS, headmaster of Roan Boys' School, Greenwich, has been appointed headmaster of the Royal Masonic School, Bushey, in succession to the Rev. H. A. Hebb, who is retiring after twenty-five years' service. Mr. Crofts was educated at Rugby School and Caius College, Cambridge; for five years he was a master at Glenalmond; he came to London as a master at Merchant Taylors' School in 1902, and was appointed headmaster of the Roan School in 1911. He has edited a number of French and German texts.

* * *

THE Rev. H. A. HEBB, who is retiring from the headmastership of the Masonic School, Bushey, was educated at the City of London School and Queen's College, Oxford. He spent three years as a master at Whitgift School, Croydon, and thirteen years at Exeter Grammar School, whence he went to Bushey in 1890.

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MR. J. H. CADMAN, for four years headmaster of the Secondary and Technical Schools, Heywood, Lancashire, has been appointed director of studies of Pitman's School, London.

* * *

MR. B. BRANFORD has returned to work after a somewhat serious illness; few inspectors have made more friends than he among the teachers whose work they inspect, and hence there was considerable anxiety during his prolonged absence. It is hoped that his health will permit him to continue his work in London for many years to come, for an inspectorial visit from him is an inspiration.

* * *

SCHOOLMASTERS, in the national crisis, are playing their parts like men, and are doing much to improve the popular opinion of their powers and capacity. Many of those who have obtained commissions are rapidly receiving promotion, and those employed in emergency work for the country, whether as munition workers, special constables, enumerators, or organisers of agricultural labour, are showing that the profession has perhaps more ability than was formerly allowed to its credit.

ONLOOKER.

HUMANISTIC CULTURE THROUGH ENGLISH LITERATURE.¹

By Prof. D. FRASER HARRIS, M.D., D.Sc., F.R.S.E.,
Dalhousie University, Halifax, N.S.

I CANNOT do better than begin by defining culture. Culture, I should say, was an attitude of mind rather than a possession of mind; it is an intellectual atmosphere rather than intellectual property. It is having intellectual sympathy rather than having learning. A cultured person need not be technically trained, but he must have intellectual receptivity and æsthetic susceptibility. The most learned archæologist stuffed full of recondite facts about the remotest past, whether of Rome, Greece, Egypt, or Assyria, might not be a cultured man; he might have no sympathy whatever with natural science, nor condescend to understand the making of Canada, nor show any interest in music or in art. Culture is intellectual, æsthetic, and moral reverence.

Knowledge may be power; it is not necessarily culture. The prize-fighter has knowledge, perhaps the most extensive knowledge, about all the prize-fights that have ever happened since the beginning of time, but that does not entitle him to be considered a cultured person. Even capacity is not culture; ability to rule a State is not culture. Oliver Cromwell was a very able man; I doubt whether we should call him cultured. We can have capable barbarians and most able Philistines, just as on the other hand we can have erudition without culture.

Now this very idea of culture, as distinguished from learning, is Greek. The antithesis between the fully developed human organism, fully developed in body and mind, and man in the wild or natural state, unendowed, unenlightened, unrestrained in instincts and proclivities, is a Greek conception. The Greeks took themselves as representing this culture, this state of mind, as other than the natural and untrained condition of man; and all persons outside themselves they called barbarians, the uncultivated. This Greek ideal was realised only after physical labour and mental toil—gymnastics and study—had altered body and mind from the wild, rude state of Nature.

The whole attitude of the Greek mind was cultured; it not only longed for knowledge for "some new thing," it craved to be surrounded with beauty, it yearned for the comely, the graceful, the reposeful. The Grecian ideal was a soul undistressed by sordid cares, a countenance calm in the contemplation of the dignified and noble in thought and action and the sweet in sound. Grace in action is particularly Greek; the Nike Apteros is pre-eminently Greek.

Of course, this ideal was Pagan, and we must take care not to read into it the conceptions of Christian ethics. Grecian culture included much that was not only contrary to, but positively repugnant to, Christian morals. The Grecian ideal was suitability, not righteousness; power, not purity; fitness, not holiness; the grace of form and carriage,

¹ An address delivered before a Congress of the School Teachers of Nova Scotia.

not the grace of a contrite heart. The Greek admired subtlety of dialectic distinctions far more than honest dealing.

The beauty that is in science it hardly dreamed of, for, save mathematics, the physical sciences were only just born; the beauty of holiness was inconceivable; the beauty of thought, of introspective philosophy rather than of conduct, was what stress was laid on. These ideas and ideals passed over into the Roman Empire; and in course of time Rome became Hellenised, and all that was best there was an importation; her philosophers, poets, sculptors, and physicians were either Greeks of Greek descent or of Greek training. Even the great Galen, the father of medicine for a thousand years, physician to Marcus Aurelius, was not a Roman; he was a Greek, born at Pergamos; he wrote in Greek, and his writings were not translated into Latin for centuries after his death. Later, Roman culture became practically synonymous with Grecian thought, and the Romans learned Greek as we learn French or German; the ideal Roman became a sterner, harder version of the Greek. Of course, just before the fall of the Empire, the Romans were more effeminate than the softest Greeks had been. The sweetness and light had passed over from Greece to Rome, but thenceforth there was less sweetness and more strength, less philosophy and more love of conquest, less light and more law-giving; Roman thought was Grecianised, and then—Rome fell. When Rome fell the Dark Ages set in, and these ages were dark because the light of culture had been put out.

Christianity had indeed supplanted Paganism, but Christianity in itself was not culture; and the Dark Ages were dark because Christianity was interpreted and practised without culture.

As the keynote of the classical Paganism had been culture without moral goodness, so the keynote of the Christianity of the Dark Ages was moral goodness without culture: the result was the monk, the anchorite. The monk, when he was not ignorant, bigoted, or immoral, was a sincere recluse learned in the limited learning of his day, but narrow—as narrow as piety without culture could make him. Hence there was nothing for the common people, no science or "natural knowledge," that was to come; no art, for that was buried beneath the ruins of the Roman Empire; almost no vital religion, nothing but the carrying out of forms and ceremonies behind stone walls. The poor man outside had nothing to do but to till the ground in order to feed himself, as well as the holy, but unproductive, recluses inside the cloisters. The emptiness, the blankness, the intellectual dreariness of the life of the ordinary man of the Dark Ages is without parallel in any other epoch in the civilised world's history.

Without any power over the forces of Nature, which were as yet unknown, and therefore unused, with no solace from learning or comfort from art, without books or printing, without sunlight in his dwelling, the man of the Dark Ages knew no past, looked forward to no future, and could do nothing but toil in the dead present.

The monk had access to such manuscripts as the Goths had overlooked; he knew of a past, although it was dead; he was at least a member of the church universal, outside of which there was no literature, art, or society. But even to the most learned Churchman, Greece and Rome were little more than traditions; the classic past had no message for him; Greece had worshipped his God as the Unknown, and Rome had crucified the *Salvator Hominum*. The culture of the pre-Christian republics and empires were nothing to him; its exponents had magnified the dignity of the human mind, and had glorified in stone and pigment the beauty and strength of the human form; but he read in his Bible, "I will bring to naught the wisdom of this world that no flesh may glory," and, as regards the body, he was told it had to be "kept under" and mortified daily. The sincere man of the Dark Ages fasted when his pagan precursor would have feasted; he despised natural beauty and endowments as being of the world or of the devil; his body was only an encumbrance to the life of holiness. Nothing was to be enjoyed; women were to be shunned in proportion as they were beautiful; with eyes bent on the ground, the monk saw no grandeur in the mountains, no gold in the sunshine, no glory in the flower of the grass. If such was the mental attitude of the sincere priest, what was that of the unworthy? He said "*Hocus pocus*" instead of "*Hoc est corpus meum*," for as he did not understand the Latin himself, he knew the people would be none the wiser. If culture meant a knowledge of the pagan past, it was unattainable, for the literature of that past was nearly all lost, and such classics as were known were regarded as superfluous or impure.

This most deplorable state of matters was practically ended by the invention of printing. By the middle of the fifteenth century the light began to burst at Haarlem, at Mainz, at Westminster; and once the instrument for obtaining knowledge was in men's hands, the knowledge soon came. The knowledge that came first was knowledge of the lost past; it came through Italy, and was called the Renaissance. At the fall of Rome culture was routed; at the fall of Constantinople culture was restored. When Constantinople was captured by the Turks in 1453, her scholars fled to Italy, bringing with them their precious treasures—the manuscripts of the classical authors. These learned men found patrons in the merchant princes of Florence, in the Medici, in the Dukes of Tuscany, Modena, Parma, and Ferrara. Their patronage was magnificent; culture flourished as it has never done since. In a short time numbers of scholars were copying, translating, printing, annotating, and editing all the lost treasures of the mighty minds of Athens and of Rome.

When the printing-presses of Venice, Florence, Strassburg, Antwerp, and London were at work, by the middle of the fifteenth century, the dawn of our own day of culture had broken. The classical knowledge came to England through Italy, and affected Oxford, Cambridge, the Court, the nobility, and the public schools in the order named.

Now, before we can go any further, we find ourselves face to face with the word "classical" and its relatives classic and the classics. The origin of the word "classical" as supremely good, the best of its kind, worthy to live for ever, which it does mean, dates back to the political economy of Rome. Roman citizens, for certain purposes, were arranged according to their incomes in several classes. This led one to speak of a man in the third class, or in the second, or in the first or highest "classis," as the case might be. A man in the highest was simply "classicus," classed pre-eminently, "classy," as the modern slang goes. We have a similar usage when we say "a man of rank," meaning the highest rank. Persons in the highest rank were classici.

By an easy transition of ideas, the writings of Greeks and Romans, considered the very best of their kind, were called classical, or "*the classics*," an extension which included all Greek and Latin literature. Thus "classical" has come to mean superlatively fine, elegant, chaste in style, whether of writing, oratory, music, or art. Clearly there are no degrees of classical under this definition, but you will hear people say the concert was "very" classical or "too" classical. The uncultured, in fact, are debasing the word; because they find the compositions of the great masters dry, uninteresting, and heavy, they are using the word classical as a synonym for "boring" or "tedious," which is something we shall resolutely oppose.

What was it, then, that was re-born in Italy in the fifteenth century? Nothing short of the knowledge of the ancient world, its prose and poetry, its oratory, its art, its laws, its philosophy, its geometry; and these came as a revelation to the Italians of that time. They had been lost for a thousand years, and now they were found, and all Italy rejoiced. The discovery of America had opened up boundless possibilities in a physical future; the discovery of the art of printing, coinciding as it practically did with the Renaissance, opened up boundless possibilities in the study of an intellectual past. A civilisation the existence of which had been forgotten was suddenly revealed to the receptive attention of Italy, and it was found to be a civilisation which in refinement, oratory, and legislation was quite comparable with the best in Italian society at the close of the Middle Ages.

But the Renaissance was not merely the vivid reviving of the pagan past; with great rapidity the physical, chemical, and biological sciences rose into being; the laws governing the heavens and the earth were discovered, and Nature, which during the millennium of the Dark Ages had revealed nothing, had done nothing to aid mankind in his struggle against her, was found to be indeed none the less a mystery, but a mystery full of meaning, full of order, full of the beauty of the certainty of a cosmos.

Now let us note that at the time of the Renaissance we had the great past of the classical ages made known to the Italians of that time by *translations* of Greek and Latin authors into the Italian language, so that although large numbers of people had not the

knowledge of these ancient tongues to make them specialists and critics in grammar and palæography, nevertheless they could participate with the scholars in their intense enjoyment of the intellectual and æsthetic treasures of the past. Not every one of them was of the mental calibre of Leonardo da Vinci, Benvenuto Cellini, or Erasmus, prince of Humanists; but through the Italian vernacular there was a diffusing of an influence so humanising that all and sundry became interested in the upturning of a coin, the uncovering of a statue, or the deciphering of a manuscript.

My present point is that this humanistic influence was through the medium of Italian literature, and I hold that through the vernacular of Canada to-day there can be a similar diffusion of that same humanising culture. I need scarcely remind such an audience as this how the term Humanism arose, yet it is full of significance for us. The study of the classical past was found to have so fine, so broadening, so ameliorating an effect on the mind that it was said to humanise. The contrast was with the effects of the ignorance of the Dark Ages which it might be said did brutalise. Thus chairs of Latin founded in the universities at this time were spoken of as chairs of humanity, and a study of the classical languages was named that of the "*Litterae humaniores*."

Now I hold that without a specialist's knowledge of Greek or Latin, the English-speaking youth of to-day may be led into the appreciation of much that those ancient civilisations meant, and be made to feel that humanising power by a wisely chosen course of a study in English literature.

Without over-much philological learning, it is possible to be made to appreciate through the medium of our own magnificent literature a very great deal that is characteristic, essential, and best in the life of the pre-Christian communities.

By English reading alone a boy would be able to explain what was meant by the music of the spheres, a sop to Cerberus, who were the Graces, the Fates, and the Muses; where were Scylla and Charybdis, where the Augean stables, the difference between Pandarus and Pandora, and be in a position not to confuse Plato and Pluto, Plutus and Plautus.

The average boy is so busy with the mechanical drudgery of memorising paradigms in grammar, that he can come out of it all quite insensible to the grandeur, the breadth, the robustness, and the subtlety of classical thought. He may have spent years on Latin prose-composition, and yet be unable to tell you what "candidate" has to do with white, why a mausoleum is so called, why a certain kind of smile is known as sardonic or a countenance saturnine, what the Pierian spring has to do with learning, why dwarfs may be called pygmies, and finally what are the origins of Spartan, panic, laconic, stentorian, tantalising, and ammonia.

Just as the English schoolboy fresh from the French class cannot order his ticket or his lunch at Calais, so the grammar-grinder can go through the gorgeous galleries of Paris, Florence, Naples, or Rome and not be able to tell you anything about the Nike Apteros,

Niobe and her children, the Colosseum, or the Mamertine dungeon. Europe without humanistic culture is a wilderness; but in the English language we may find Europe completely described. The bricklayer can be so busy laying bricks that he is quite unconscious of the beauty of the palace he is helping to build. The man with the muck-rake never saw the crown.

It is possible to be a classical grammarian and yet a perfect barbarian at the same time. I am, however, not blaming the boys; when they take months to read a few chapters of Cæsar or Livy, how can they acquire a wide, general knowledge of the characteristics of life in classical times? But what their class-books cannot give them, English authors *can*. It would not be difficult to draw up a course of reading to include classical history and biography, an introduction to the study of Greek and Roman customs, beliefs, laws, and modes of thought. The past could be made to live as it *does* live in English literature, and as it does *not* in the class-books.

Some foundation in Greek and Latin grammar must be laid in order to comprehend the very rudiments of English etymology; but this being laid, a most fair superstructure could be erected of materials entirely derived from English sources. Every phase of classical life has been expounded from "Blackwood's Ancient Classics for English Readers" upwards by the most learned of English authors. There is no topic in antiquity on which some English treatise cannot be obtained; but better get knowledge from "Baedeker's Handbook" than not get it at all.

Prof. Gilbert Murray has put the position so well in an address to the Imperial Conference of Teachers in London in 1912 that I cannot do better than quote from a report of his speech:—"They did not compete with any kind of technical training. They did not teach people classics simply to make them classical scholars; they did not do it to help them definitely in their vocation, or profession, though indirectly they might so help them. They did not teach them in order to make great discoveries, as people learned science. What they attempted to do was to enable their pupils to enrich their whole life, to train their mind and imagination, and to give them not special knowledge useful for special purposes, but a general basis of knowledge which was relevant to high human endeavour. He believed that classical teachers ought constantly to overhaul themselves, to bring themselves up before the bar of their own consciences, and ask whether they were really giving intellectual food to their pupils which was as interesting and as likely to develop all the powers of the mind as they were getting from their botany lessons or their English literature. If they were not, they had got somehow to improve their teaching."

Prof. Murray just doubts whether the boys are getting from their classical teachers that food to develop their minds, such as botany or English literature can give them. I *frankly* doubt it. English scholarship has laboured to expound classical life and its conditions, why then should we ignore all this natural aid to a study of these very times. If we *are* "heirs of all the ages," let us not hesitate to enter into our inherit-

ance. Without this a very great deal of Dryden, Milton, Keats, Shelley, and Tennyson is wasted on us. Without a knowledge of classical customs, practices, and traditions a very great deal of the New Testament loses its meaning. "I appeal unto Cæsar"; to which Cæsar, and to what sort of appeal was Paul alluding?

European travel should, if possible, be indulged in, since the museums and many of the cities of Europe are so many object-lessons in antiquity; the laboratories of culture, as it were.

Instead of presenting any more libraries, Mr. Carnegie might institute a fund to enable poor people in search of what interests cultured people to travel in classical lands, a fund for students, teachers, and professors. What a fascinating course of reading about the classics in English literature could be drawn up! It would certainly include Macaulay's "Lays of Ancient Rome." "The Lay of Horatius" should be read, and the boys made to explain the allusions:—

"But hark the cry is Astur:
And lo! the ranks divide;
And the Great Lord of Luna
Comes with his stately stride,
Upon his ample shoulders
Clangs loud the four-fold shield,
And in his hand he shakes the brand
Which none but he can wield,"

and the boy might profitably be asked what slip in English grammar there is in the last line, even though it was written by Macaulay. I should also include in that course of English literature the whole of "Childe Harold," partly on account of the exquisite stanzas that deal with Greece and Italy.

"Yet to the remnants of thy splendour past
Shall pilgrims, pensive, but unwearied, throng;
Long shall the voyager, with th' Ionian blast,
Hail the bright clime of battle and of song;
Long shall thine annals and immortal tongue
Fill with thy fame the youth of many a shore;
Boast of the aged! lesson of the young!
Which sages venerate and bards adore,
As Pallas and the Muse unveil their awful lore."

The man that wrote that, brilliant, wayward, wandering Byron, whatever else he had or had not, had humanistic culture, and from his writings alone much of it could enter into the soul.

While I should be the very last person formally to sanction the omission of a study of the Greek and Latin languages in the case of many young people, still I have never held that in the case of certain minds it was a necessary discipline. There are some third-rate minds which will never absorb culture of any kind, and to try to impart even the elements of classical knowledge to them would be a serious waste of their and some teachers' time. I believe in the existence of orders of mind, first, second, third, and *n*th class, and I believe, further, that these mental endowments are as distinctly inherited as are peculiarities of body. But for other reasons the study of the ancient languages is inappropriate for those we have in mind.

It is, however, impossible too soon to arouse in the mind of any boy or girl a love of the best in any literature but particularly English, a love of the

sublime and beautiful in English writers, and the cultivation of the judgment to discriminate between the ephemeral and the immortal. For, after all, it does not need extensive erudition to perceive what are the limitations of humanistic literature at its best; we cannot forget that it lacks those features which are pre-eminently of Christian origin. The Roman had no sympathy with the weak; he was often entirely lacking in what Matthew Arnold called "sweet reasonableness"; the idea of toleration, which is of the essence of culture, he scouted as folly; scenery in itself seems to have appealed to him very feebly, and as for science he knew none to admire.

English literature is so intrinsically important, so catholic in the range of its interests, so varied in its styles and modes, and contains so much that has been epoch-making, that we consider it a disgrace to them when foreigners are ignorant of its masterpieces; how much more, then, the scandal when the sons and daughters of England do not know it—for to know it is to love it. The literature that contains the English Bible, the Pilgrim's Progress, the plays of Shakespeare, the Principia, the account of the discovery of the circulation of the blood, the writings of Bacon, "Paradise Lost," the Essays of Lord Macaulay, "Ivanhoe," "The Heart of Midlothian," "Adam Bede," "The Elegy in a Country Churchyard," and "In Memoriam," contains such masterpieces that the finest minds outside the British Empire have called them classics; there is no higher praise.

I am convinced that the reading of the English masterpieces is far too little made a matter of the ordinary, every-day school routine. It is quite as important for a boy to know who said and under what circumstances it was said, "I would rather have written that poem than take Quebec," as it is for me to extract the cube root of 1912.

It is of more consequence for me to understand the state of England, politically, morally, scientifically, during the lifetime of Shakespeare or Harvey than for me to be able to define the cosine of an angle or to explain the meaning of negative indices, for—

"These earthly godfathers of heaven's lights,
That give a name to every fixed star,
Have no more profit of their shining nights
Than those that walk and know not what they are."

English literature, while as subtle as the Greek and as virile as the Roman, can give a culture sweeter, fairer, more human, more humanistic, for it gives us something which neither proud philosophy nor clear-eyed science knows, and which the most finished product of antiquity could never have felt; it has tenderer songs and more delicate fancies than the finest of the ancients could have sung or dreamed. "Daffodils that come before the swallow dares and take the winds of March with beauty," could never have been written out of England. English culture includes a tolerance which the Roman would have scorned as weakness, a capacity for admiration which his pride would never have permitted, and a humility of spirit which constrains us to believe that it is perfectly true, "to know all, is to forgive all."

BOARD OF EDUCATION CIRCULAR 849.¹

By the REV. CANON RAWNSLEY, M.A.

THE question raised by Circular 849 is one that has been forcing itself upon the educational mind for some years past. It took definite shape that came to nothing in certain recommendations of the Consultative Committee in 1904. It was revived by a report of the same Committee, which began to take evidence in 1909. That evidence was given by: (1) representatives of eight examining bodies; (2) eight officials of the Board of Education and local education authorities; (3) thirteen persons engaged in teaching; (4) medical witnesses; (5) four general witnesses, viz., Sir William McCormick, Dr. Norman Moore, Major-General Sir Archibald Murray (Director of Military Training), and Sir John Struthers.

The report was received with mixed feelings, but it was considered an important document, and the time, it was thought, had come to move the Board of Education to promote some needed reform in the matter of the multiplicity of competing examinations.

The need of such reform was apparent from the fact that there were in existence ninety separate examinations which professed to test the proficiency of pupils in secondary schools; and when we are told that in 1912 it was possible to pass the London Matriculation examination in 352 different ways, the case seems pretty clear that the time is ripe for reducing order out of chaos, and simplicity out of complication, which is now a bewilderment to parents, and an incubus upon schoolmasters who have at the sweet will of the parent to prepare their charges for this or that examination.

That, at any rate, was the view of the Federal Council of Secondary Schools Associations, and they called a conference to consider the matter, backing up their conclusions by certain resolutions of the Headmasters' and Headmistresses' Associations, and by the opinions of such books as P. G. Hartog's "Examinations in their bearing on National Efficiency" and Norwood and Hope's "Higher Education of Boys in England."

They reported to their Council on December 5th, 1912, and this report, after amendment, was sent to the Board of Education with a request that the Board should call a conference to consider the matter. This the Board willingly did, and we must thank the Board for doing so, though it is perhaps a pity that it was not rather wider in its purview.

The whole matter was brought to a head by Circular 849, which was issued to local education authorities and secondary schools just a year ago. That Circular is clearly only tentative, but it is believed to embody the views of the Consultative Committee, the Federal Council of Secondary Schools Associations, and to have been compiled after the Board had conferred with all the universities and had consulted representatives of some of the leading local education authorities, and after having before them

¹ An address delivered at the annual meeting of the Secondary Schools Association on July 15th, 1915.

resolutions from the Teachers' Guild and the Registration Council.

I have gone into this at some length, because I think it fair to the Board of Education to say that they have not done this work of their own initiative, but have been moved thereto by various educational bodies, and they have shown a willingness to listen to criticism and to hear the other side of the question, which is surely all to their credit.

If they have done nothing else, they have by this Circular 849 set local education authorities thinking, and if my experience is general they have proved that they were willing to give considerate attention to the views of local authorities, and, within limits, to give and take on the questions raised. We of this Association have from early days argued that no great changes in the educational world should be made by the Board without taking education authorities into their confidence before they bring in new legislation, and this they have done, and for this and for their frankness in consulting the various bodies in a document that is still under revision we must give them thanks.

That the minds of many are not likely to be easily reconcilable to Circular 849 is plain from the hostile criticism which the past few months have brought to light, and though perhaps it is not too much to say that some of this hostility is natural because vested interests are touched, and some of it is partisan, if one may use the word in a non-invidious sense, some of it is based on ideas of education which are worthy of careful consideration, and cannot be lightly dismissed.

I do not understand it to be my duty to do more than open the discussion, and if I try to point out the pros and cons of the scheme you will, I hope, realise that I do it for the sake of promoting such discussion. We may not be agreed as to the opportuneness of pressing the matter forward in this time of war and trouble. The Headmasters' Conference, by having adjourned their debate on the subject to their next Christmas meeting, look as if they thought no immediate action would be taken by the Department, and the Teachers' Registration Council is emphatic in its pronouncement. "The present moment," say they, "does not appear opportune for revolutionising the educational methods of the country," and they add, "at any rate not in the direction of centralised bureaucratic control."

But we are all agreed that some method must be found to cure an acknowledged evil, and we cannot well wait until, as the National Union of Elementary School Teachers suggest, all the universities and professional bodies have accepted the Scheme in lieu of matriculation and their several preliminary examinations. The Scheme is tentative, and *solvitur ambulando* must be the motto both for Department and for schools if the Scheme is to have a chance of trial or success.

What, then, are the aims of the now famous Circular 849?

To discourage, as far as possible, the waste of time in preparing scholars for various external examinations by setting up a simpler machinery for examina-

tion purposes, which shall be a test rather of the efficient work of a school at a particular period than of the individual capacity of the pupil, but, at the same time, an examination upon which a certificate may be given to scholars of fifth-form capacity after a three years' course in an efficient secondary school. This, it is hoped, may be a stimulus to the child and a satisfaction to the parent.

This examination is to take the form of an examination of normal fifth-form standard, and the form is to be the unit for such examination.

Arrangements will be made for admitting to such examinations the scholars of private schools who desire to win the certificate.

The examination is to be annual, but is to prevent cram by being a form examination, and not one of individuals.

The average age of the pupil is to be from sixteen to sixteen years eight months, but it is to be elastic, and the age will be liberally extended in the cases of girl students. The age and the form or class has been selected because it is believed that scholars of that form and age will not have been so advanced in study as to have begun specialising for university or profession. This examination will be the first-grade examination, and will supersede, or rather make unnecessary, the Junior Oxford and Cambridge Local examinations. It will correspond closely to the present school certificate examinations of the English universities. Its subjects will be: (1) English subjects; (2) languages; (3) science and mathematics; and the papers will be so set that the students may obtain either honours or a pass. It is believed, too, that those who obtain honours will be accepted as having qualified for matriculation at the universities.

It is to be noted that the fourth main group of subjects, including music, drawing, manual work, and housecraft, all of them subjects coming more and more into prominence, are not examined in this form test. We are told by the Board that the reason for this exclusion lies in the fact that these subjects cannot be tested by a written examination, and it is thought that a separate examination will be needed for them, and the results will be endorsed upon the certificate issued for the main fifth-form examination.

The Second or Higher Grade examination that is proposed is to be the sixth-form examination for scholars who, staying at the secondary schools for the two years beyond the first examination age, are specialising for university or profession, and need this extra two years' training. The group of subjects, though great variation is to be allowed, suggested for this course is: classics and ancient history, modern humanities studies, science and mathematics.

Now, of course, much will depend on the attitude of the various professions and the attitude of the universities as to the proposal. And whilst, on the one hand, I believe that the idea of examination by form rather than by candidates may prevent cramming, it is quite certain that unless the standard is low enough to allow the majority of any fifth form to obtain a pass, an outcry will be raised that we are defeating our own ends by making scholar-

ship successes the sole aim of the school curriculum, and, at the same time, we shall be driving a lot of children to crammers and private schools.

But if the standard is low enough merely to represent a pass, it will not carry with it such weight outside the school as to help its winner to his work in life.

It would appear that the proposals of the Board for which I think they are not responsible, so far as the initiative goes, but to which they have been moved by a large part of the teaching profession, have divided the teaching profession into two camps, the one welcoming any plan that will rid them of the nuisance of competing examination tests, even at the risk of a kind of monotony of result and centralised control, the other seriously alarmed at the idea of bureaucratic control, and a fear lest this attempt to co-ordinate secondary education by establishing a single standard of attainment irrespective of local needs and capabilities, will mean a loss of freedom and flexibility for the whole secondary education of the country.

These latter point to Germany and to Scotland, and ask whether for the cast-iron mould that reduces all schools to one type we are willing to part with the variety which expresses itself now as differentiating public schools, grammar schools, local endowed schools, and the various grades of municipal secondary schools.

The opponents of the Scheme further assert that it proposes to deprive local authorities of the right hitherto exercised of determining from time to time—having regard to the secondary schools within their area and the needs of the pupils in their local circumstances—the kinds of external examinations to be taken by the pupils in the secondary schools maintained by them. They doubt whether a lower school certificate can be usefully granted to pupils below matriculation standard. They fear that the granting of such lower certificate might tend to shorten the school life. Whether such certificate should be granted in any area, they think should be left to the local education authority to decide. They doubt the expediency of the upper or sixth-form examination, for pupils who stay on to the age of eighteen, and are not working for the university or professional life, will be very few in number, and hardly demand the extensive machinery to grant these comparatively few pupils their higher certificate.

They doubt the advisability of the first examination being based strictly upon the curriculum of the school. They do not see how uniformity of standard can thus be obtained. They feel strongly that the omission from the Board's Scheme of any proposal to associate nominees of the local education authority with the examining body is unwise and unsympathetic with the work the local bodies have done for the last ten years. They think that whilst teachers in secondary schools should certainly serve on the examining body, they should have nothing to do with the marking of the papers.

There are others who are friendly to the Scheme, but who consider :—

(1) That some assurance should be obtained from

the universities and the authorities responsible for the entrance examinations to the professions that the new examination would be accepted by them in lieu of their preliminary examinations.

(2) That further information is needed as to the constitution of the university examining bodies which are proposed to be recognised for the new examinations, and that the local authorities and teachers actually engaged in secondary schools should be directly represented on all the examining bodies.

(3) They think that the conditions laid down in the Circular as to the age of candidates for the first examination should not be rigidly enforced, and especially not in small schools, where the attainments of the pupils in each form may be very diverse. It should be at the discretion of the headmaster in such schools to withhold from examination in any year any pupils in the form that are not judged to be fit to take the examination in that year.

With regard to No. 1, after an interview with the Board I believe we need have no doubt but that the assurance will be obtained. Unless the universities and authorities consent, this Scheme will go by the board.

With regard to No. 2, I also am assured that teachers actually engaged in secondary schools will be represented on the examining bodies of the younger universities, and that, as far as the older universities of Oxford and Cambridge go, at least once a year they will call into consultation such representatives of local authorities and teachers as will form a consultative body *ad hoc*.

With regard to No. 3, the idea of the Board is to test the work of the school at a particular stage, and the fifth-form stage has been chosen, for after the fifth form specialisation begins. But there is no bar to any age of a pupil for this examination if he is in the form.

It seems to me that the crux of the whole problem lies in the new departure of examining a form *quâ* form and not *quâ* individual. For, as the forms go now, it seems hardly possible with any fairness to make a form the unit for examination. There may be bright children in a form who would be terribly handicapped by the fact that the remainder of the form are below the average in attainment, and there will then be a lowering of the whole form, to the detriment of the capacity of these brighter scholars.

But, in addition to this, the form is composed of scholars who can be presented within the limits of age, but one scholar is in set 1 mathematics, set 2 French, set 3 chemistry, and set 4 English literature; whilst another is in set 4 mathematics, set 1 Latin, set 3 history, and so on. However praiseworthy the intention is to prevent cram and get a general idea of fifth-form attainment in a school, it looks as if the plan was unworkable, and especially in small schools, where the average of attainment in each form may be very diverse. And unless the headmaster has power to withhold from examination in any year pupils in that form who are not fit to take the examination, great hardship may result. I know, of course, that the Board is ready to admit that a headmaster may ask for the exemption of a scholar from examination

on grounds of health or fear of pressure, but the Board, aiming at gaining a general idea of the work of the form as a whole, is unwilling to admit that only the bright scholars shall be brought forward for examination. The Board seems to me to have overlooked the fact that a boy may have a real genius in one of the three subjects offered for examination, and be absolutely dull and backward in the other subjects. We have all of us known scholars who showed remarkable ability in English who could hardly pass any examinations in elementary mathematics, and *vice versa*. But as matters are, each scholar is to show a reasonable amount of attainment in all the three groups.

With regard to paragraph 13 of the Scheme, it is feared by some that the certificate there mentioned, if of any value, may tend to the taking away of children from school before the age of sixteen, or sending them for only a year or two to qualify for the examination. But the idea behind that clause from the Board's point of view is that there must be some possibility of pupils in schools, other than those recognised as efficient secondary schools, taking the examination, and seeing that no certificate to scholars in a recognised secondary school will be granted until the scholars reach sixteen, the scholar will need to have been in the school for at least three years. It is hoped that parents and employers alike, who recognise that the worth of the certificate lies principally in the fact that it carries on the face of it the proof of three years of school life at least, will bring pressure to bear to prevent children leaving before the certificate is granted.

It is urged by those who are friendly to the Scheme that local authorities and governing bodies should have complete freedom of choice among the examining bodies recognised by the Board, and that to effect this the words "submit for the approval of the Board proposals for the annual examination" should be deleted, and the words "arrange for the annual examination" should be substituted.

It is not improbable that the Board will listen to this suggestion, for I understand that all that the Board wishes is to prevent caprice in the choice of examination, and to secure due consideration of all the circumstances. Some of us think that arrangements should be made to enable a school to take its annual examination at the end of either the autumn or spring term, instead of only in the summer. I am assured that as matters are there will probably be a choice of two terms for the examination, and one of the universities already proposes to offer these examinations three times in the year, and the Board will raise no objection to other universities following suit.

Friends of the Scheme demand that fuller particulars of the actual functions and constitution of the advisory body should be given, and that a larger representation thereon of local education authorities and teachers is necessary. I understand that the Board will give these particulars as soon as the advisory body is nearer accomplishment, and that the Board sees nothing to prevent such representation,

for their aim is to make the advisory body a real thing, and not a formal body.

As to the question of financing the Scheme, all—whether friends or opponents—are at one in demanding that adequate provision should be made by the Board of Education for the additional expenditure on examinations involved in the Scheme, and that it is desirable there should be a uniform examination fee.

I am not giving away any secrets when I say that the Board realises that this demand is a just one, and would recognise gratefully any strengthening of their hands in dealing with the Treasury in this matter. The Board also realises that a uniform fee would be an advantage, though it thinks it more important that a minimum fee should be fixed than to forbid any examining body to exceed that minimum.

There can be no question that friends and opponents of the Scheme alike do welcome the suggestion that the pupils of secondary schools between the ages of fifteen and seventeen should take an examination to be conducted by one of the universities or some other competent body, which examination should be fairly equal in standard, and should entitle successful pupils to a school certificate, and that such examination should be of matriculation scope and standard, but there are many who feel that that examination must be so arranged that those who are not up to matriculation standard should receive a pass.

What is deprecated in many quarters is the prohibition of all examinations except that proposed by the Board's Scheme, and it is believed that if the Scheme had been tentative and permissive, a great deal of opposition would have been avoided, and the work of the Board in what is considered an important reform would have been facilitated.

There is a general lament, so far as I can gather, that the Board has left out of count the fourth group of subjects in our secondary schools—music, drawing, manual work, and housecraft—on the ground that these subjects are not in the same way as others capable of being tested by a written examination. It is felt that the Board rather gives itself away when it makes this assertion, for papers could be set in most of these subjects, whilst the oral or practical examination which will be necessary for these subjects, and for which every facility will be given to examining bodies to offer examination in, is not a necessity only in these subjects of the fourth group, but in some of the subjects of the three groups that are tested by written papers.

It is to be doubted if we can ever safely omit oral examination if we would really obtain anything like adequate knowledge of the capacity of the pupils. In the German *abiturientenexamen*, and also in several French examination *bourses* for diplomas, *visà voce* forms an integral part, and we might well take a leaf out of the book of some local authorities in their minor scholarship examinations, and see that *visà voce* had its proper place in the standard examination of the fifth form, which it is now proposed to establish.

One other matter, I take it, both friends and

opponents of the Scheme are agreed upon, that the arrangements in clause 18 which are to be made for the closest co-operation between his Majesty's inspectors and both the examining bodies and advisory committee for co-ordination is of great importance. But it is questionable whether the reports of inspection which shall always be available for the committee, and the inspection reports of the schools of which the examination has been approved, and which each examining body will receive as a matter of course, will be all the use that they might be if inspection and examination do not proceed *pari passu*. As matters are, the inspections which are so helpful to the governing bodies and the headmasters will probably not be near enough to the date of examination to be of the great service which they otherwise would be; and it has been suggested that if the triennial inspection of a school were supplemented by an external examination the year before, and an internal examination the succeeding year, this compulsory examination by an external body would not be necessary.

I have attempted to give the pros and cons of Circular 849. I have not touched upon the more important question as to how far this revolutionary change, with all its good intention, is really going to be the benefit it designs for the educational life of our schools. Judged by the findings of the Consultative Committee and Report of 1911 on the evils of examination, it certainly does not seem likely to be a cure for any of them, though in some instances it may be a palliative, notably in the fact that it gets rid of the evil of the junior and preliminary locals; but my fear is that though there are no payments by results, a great deal of effort will be expended on producing a fifth form up to standard, and if, as that Consultative Committee suggested, it is unfair to test a boy by a single examination, notwithstanding that the form and not the individual is the unit for examination, it is hard to see how this unfairness would be rectified. The greatest harm I see in the matter is the fact that it fastens an examination system for ever upon all the schools that desire to be considered efficient, which, after all, only tests a boy's intellectual equipment, and not all of that. We are more and more coming to see that our schools stand for the formation of character, and this fifth-form examination takes no account of things outside the class-room—the boy's conduct, the boy's relations with his fellows, the boy's success as a monitor, the boy's physique, and many other things that are as important to his future manhood as his success in class.

Nor does the Board seem to have recognised the fact that the girl attitude towards examination is different from the boy attitude. Some headmistresses assert that the having to prepare for an examination in some instances seems actually to paralyse a girl's powers. Her faculties appear dulled by the thought of it, whereas if she is allowed to work on steadily and naturally she can do fairly well.

There is a good deal to be said for any single examination which the professions generally would have recognised as opening their doors to the student,

and thus allowing him his freedom to go forward to preparation for his work in life, but I do not understand that this system in any way will tend to get rid of the competitive examinations for these professions or for the Civil Service, and there is a note of compulsion about Circular 849 which seems alien to that greater elasticity and freedom for experiments in school methods which certainly hitherto has, with all its drawbacks, fostered individuality and variety in our school system. On the other hand, I do not, as some appear to do, see in this Circular the cloven hoof of a demand for bureaucratic and central control. It appears to me, for almost the first time in its history, the Board has been willing to look upon the teachers as their helpers and comrades. There is a natural tendency for university men to forget their schoolboy days in the setting of examination papers, and it is to the teachers that we must look to keep the papers at a schoolboy, rather than at an undergraduate, standard. Let me repeat that if, as I understand, the demand for this Circular has come from the teaching profession, that profession can hardly turn round now and disown its initiative, but it can urge amendments.

I have touched on many points, but I daresay have omitted others. I trust the discussion that will ensue will bring these into relief.

EXAMINATIONS IN SECONDARY SCHOOLS. BOARD OF EDUCATION CIRCULAR 849.

MEMORANDUM BY THE TEACHERS' REGISTRATION COUNCIL.

I. PRELIMINARY.—Many of the drawbacks of the present system of examinations in secondary schools are now generally admitted, and need not be repeated here.

The question of fundamental importance is whether the proposals outlined in the memorandum of the Board of Education will effectively reform the present system.

There is a danger lest a new machinery should be set up as is proposed without the desired changes being brought about, and it is on this point that the council feels considerable anxiety.

II. ADVISORY COMMITTEE AND EXAMINING BODIES.—The success of the scheme depends largely upon the nature of the authority which supervises it.

The council is of opinion that on any council that may be formed on the lines suggested by the consultative committee, or on any board or advisory committee which may be formed to assist the Board of Education in performing the functions of a co-ordinating authority, not less than one half of the members should be appointed by the Teachers' Registration Council.

The council also strongly recommends that the representatives of universities on the board or advisory committee should be appointed by the universities, and not directly by any university examining body.

The council is of opinion that on any examining body approved by the Board of Education there should

be an adequate number of representatives engaged in teaching.

III. STANDARD OF MATRICULATION.—The council desires to see the present standard of matriculation maintained, and, as soon as possible, raised.

IV. COMPULSORY EXAMINATION.—The council is of opinion that the examination should not be made compulsory in any grant-earning school. The number of certificates obtained, many, few, or none, is by itself no effective evidence of the efficiency of a school. The demand for certificates comes from outside bodies, and under our existing methods most schools find it to be a necessity to prepare for them. But if any school does not desire to prepare for them it should be allowed complete freedom. Inspection as a test of efficiency is more important than examinations.

V. TESTING OF SUBJECTS UNSUITED FOR PAPER EXAMINATIONS ALONE.—The council is very strongly of opinion that the fourth group of subjects mentioned in the Board's memorandum should count towards a certificate. They think that this fourth group contains subjects which in some form ought to be part of the regular curriculum of a considerable proportion of pupils in a secondary school. To omit them from the groups which count towards a certificate is directly to discourage them just at a time when they most require encouragement. To leave them out now in the hope that they may come to count some day is to provide against their counting in some schools where the effort to prepare for subjects that do count for certificates absorbs most of the available energies of the teachers concerned. The reason given for not testing candidates in this fourth group is that these subjects are not capable of being tested by a written examination. The great and increasing importance of these subjects and their value in bringing out faculties which paper examinations alone can never test deserve the most careful consideration of the Board before any new system of examinations is embarked upon. The council is of opinion that whatever the cost may be of the provision of the means for the proper testing of subjects in the fourth group, no new system of examinations should be begun until adequate arrangements for such provision have been made. The council also holds that neither science nor modern languages can be tested in a thoroughly satisfactory way by a written examination alone.

In this connection the council desires to point out that:—The proposals of the board make no effective provision for establishing a system of visiting examiners to work in connection with the written examination. The council regrets this, particularly in regard to the subjects of Group 4. If this is a question of expense the council thinks it would be better to wait until the money is available rather than start on unsatisfactory lines. The provision that the reports of inspection will be available for the advisory committee and examining bodies and that H.M. Inspectors will co-operate with these bodies, while showing a thoroughly friendly spirit towards the bodies concerned, does not appear in any way to meet the need, the great importance of which the council has endeavoured to point out.

VI. TEACHERS AND THE EXAMINING BODIES.—The council welcomes the proposals, which are entitled

“Teachers and the Examinations.” As already stated, it is strongly of opinion that, in spite of certain possible geographical difficulties, teachers, both men and women, should be directly and adequately represented on all the examining bodies.

VII. PRESENTATION OF WHOLE FORM.—The council wishes to point out that, in view of the varying systems of organisation which exist in secondary schools, some definition of the term “whole form” will be necessary. It is of opinion, moreover, that in some cases it will be undesirable to require a school to present a whole form for examination.

The council would welcome with the greatest satisfaction the removal of the great and growing evils that arise from our present system of examinations in secondary schools, which tend too often to make our education far too mechanical and to misdirect the energies of the pupils, which constantly fail to bring out some of the most important faculties of the boys and girls, and which frequently hamper and baffle teachers in their efforts to give a sound and broad education well fitted to their pupils on well-organised lines.

It is of the utmost importance that whenever the much-needed reform takes place which the Board desires to bring about, it shall be the very best plan from the first, with so far as is possible a certain promise of success and the cordial support of all those who are most concerned.

REGISTRATION COUNCIL REPRESENTATIVE OF THE TEACHING PROFESSION.

Triennial Period beginning July 1st, 1915.

Chairman: DR. MICHAEL E. SADLER, Vice-Chancellor, University of Leeds.

LIST OF MEMBERS APPOINTED UNDER THE ORDER IN COUNCIL MADE ON FEBRUARY 29TH, 1912.

1. Appointments made by Bodies shown in Part I. of the First Schedule to the Order in Council.

UNIVERSITY TEACHERS.

Appointing Body	Person or Persons Appointed
The Hebdomadal Council of the University of Oxford...	The Very Rev. T. B. Strong
The Council of the Senate of the University of Cambridge ...	Mr. W. Durnford
The Senate of the University of Durham ...	Prof. F. B. Jevons
The Senate of the University of London ...	Dr. T. Gregory Foster
The Council of the Victoria University of Manchester ...	Prof. J. J. Findlay
The Council of the University of Birmingham ...	Prof. Alfred Hughes
The Council of the University of Liverpool ...	Sir Alfred Dale
The Council of the University of Leeds ...	Prof. B. M. Connal
The Council of the University of Sheffield ...	Prof. J. A. Green
The Council of the University of Bristol ...	Prof. J. Wertheimer
The University Court of the University of Wales ...	Principal E. H. Griffiths

ELEMENTARY TEACHERS.

Appointing Body	Person or Persons Appointed
National Union of Teachers ...	Miss J. Wood Miss I. Cleghorn Miss E. R. Conway Mr. W. B. Steer Mr. Allen Croft Mr. A. W. Dakers Mr. G. Sharples
National Association of Head Teachers ...	Mr. J. W. Iliffe
National Federation of Class Teachers ...	Miss E. F. L. Goodwin Miss E. Phillips Mr. T. H. J. Underdown

SECONDARY TEACHERS.

Appointing Body	Person or Persons Appointed
Headmasters' Conference ...	Mr. M. J. Rendall
Headmasters' Association ...	Sir John D. McClure
Headmistresses' Association ...	Miss M. A. Douglas Miss Florence Gadesden
Assistant Masters' Association ...	Mr. A. A. Somerville
Assistant Mistresses' Association ...	Miss E. S. Lees
Association of Preparatory Schools ...	Mr. Frank Ritchie
Private Schools' Association ...	Dr. F. A. Sibly
College of Preceptors ...	Mr. W. G. Rushbrooke
Teachers' Guild ...	Miss M. E. Robertson
Froebel Society ...	Miss L. James

2. *Appointments made by Bodies or Groups of Bodies shown in Part II. of the First Schedule to the Order in Council.*

SPECIALIST TEACHERS.

Appointing Body	Person or Persons Appointed
Association of Technical Institutions ...	Mr. F. Wilkinson
Association of Teachers in Technical Institutions ...	Mr. P. Abbott
National Society of Art Masters	Mr. H. B. Carpenter
Art Teachers' Guild ...	
Royal Drawing Society ...	
Royal Academy of Music ...	
Royal College of Music ...	
Union of Graduates in Music Incorporated ...	Dr. H. W. Richards
Union of Directors of Music in Secondary Schools ...	
Incorporated Society of Musicians	
Guildhall School of Music ...	
Royal College of Organists ...	
National Shorthand Association (Incorporated) Teachers' Section ...	Mr. Alfred Nixon
Society of Certificated Teachers of Shorthand ...	
Association of Book-keeping Teachers ...	
Incorporated Society of Commercial Teachers ...	
Association of Teachers of Domestic Subjects ...	
National Association of Manual Training Teachers ...	Miss M. E. Marsden
Educational Handwork Association ...	
	Mr. J. Tipping

SPECIALIST TEACHERS—continued.

Appointing Body	Person or Persons Appointed
Incorporated Gymnastic Teachers' Institute ...	Mr. Guy M. Campbell
British College of Physical Education ...	
Ling Association ...	
National Society of Physical Education ...	
Union of Teachers of the Deaf on the Pure Oral System ...	
National Association of Teachers of the Deaf ...	Mr. A. J. Story
College of Teachers of the Blind	
Smith Training College of the Royal Normal College for the Blind ...	Miss M. M. R. Garaway
Training College Association ...	
Teachers' Training Association ...	Prof. John Adams

HISTORY AND CURRENT EVENTS.

"AND there went out a decree from Cæsar Augustus that all the world should be registered." So runs the sentence familiar to most, if not all, of us with which the history of the birth of Jesus Christ is introduced. For what purpose this registration was made we leave to the scholars familiar with the administration of the Roman Empire, and such registrations as we have had in the British Isles, under the name of census, do not help us much, since for the ordinary layman the census does not affect his daily life after he has filled in the form and delivered it to the collector. But now we shall understand better the meaning and object of such statistics. Everyone between the ages of fifteen and sixty-five has stated what service he or she can render to the country at this crisis in her affairs, over and above that "daily round and common task" which have previously been considered as the fulfilment of our duties. To adapt Tennyson's phrase, "The individual withers and the State is more and more."

SIR ROBERT BORDEN, the Prime Minister of Canada, is in England and has been taking a large part in public proceedings. To the student of the constitutional history of Britain, the most important of his doings has been perhaps his attendance at one meeting of the Cabinet, if not more. The history of the Cabinet is the most typical of the growth of our system of government. Developing for a long time in comparative obscurity and shaped to a large extent by what may be regarded as accidental circumstances, bound by no laws and adapting itself to the requirements of various political situations, it has retained an elasticity and resourcefulness which have constantly kept it "up to date." And now that we are within sight of circumstances which may probably lead to a still closer connection between the mother country and the daughter nations, Sir Robert's presence at a meeting of our grand executive may be regarded as a herald of what may come to pass before long.

THE conquest of German South-West Africa is another event which sends our thoughts "before and after." Those of us who were old enough, when this century began, to reflect on the meanings of the last

Boer War will remember the action of the British Government of the day in the settlement of that conflict and the shaping of policy which led to a united South Africa. It would almost seem as if Germany had waited until the British Empire was united more closely than ever, before she launched into this great war. At least, recent events in Africa have justified the action of those days, when Louis Botha, our enemy of yesterday, has, in the name of the Empire of which he is so worthy a citizen, not only crushed rebellion, but conquered a colony of the enemy. "What will be the action of Britain when the time comes for settlement? How far will South Africa be consulted?" are questions of interest both for Europe and for the British Empire.

THE Russians have retreated not only from their conquest in Galicia, but also from Warsaw, the capital of Poland, in order to maintain their line of battle and their communications intact, and once again, as before in history, we realise the meaning of the phrase, "unhappy Poland," and remember that a large proportion of its population is composed of that also "unhappy" people, the Jews. It is far beyond the limits of our space to expound the meaning of this epithet. Warsaw has seen wars and troubles innumerable. In the sixteenth century and until in 1720 Sweden ceased to be a warlike Power, there were wars between Sweden and Poland with varying fortunes. From that time until quite recent years Poland gradually fell under the domination of Russia, partly from the inherent weakness of her social and political constitution, and, with the brief interval of Napoleon's Grand Duchy of Warsaw, her history has been one of struggle against those who partitioned her in the latter part of the eighteenth century, but especially against Russia. What this war will do for her the future alone can tell.

ITEMS OF INTEREST.

GENERAL.

At the Manchester meeting of the British Association to be held from September 7th to 11th the arrangements for section L, Educational Science, are as follows:—On Wednesday morning, September 8th, the presidential address will be delivered by Mrs. Henry Sidgwick, and a discussion on "Methods and Content of History as a subject of School Study" will take place, in which Prof. F. J. C. Hearnshaw, Prof. Ramsay Muir, Prof. T. F. Tout, Dr. J. E. Morris, and Mr. J. A. White have promised to take part. On successive mornings other discussions have been arranged, when many well-known educationists will speak. The subjects and speakers are:—"Military Training in Schools," the headmaster of Rugby, the highmaster of Manchester Grammar School, and Mr. A. A. Somerville; "Education of Women in relation to their Careers," Mrs. Courtney, Miss Haldane, Miss R. Oldham, Miss Charlesworth, and Miss Escott; "Education and Industry," Sir William Mather, Prof. H. E. Armstrong, Mr. J. C. M. Garnett, Mr. J. Graham, Mr. A. P. M. Fleming, and Mr. J. G. Pearce. Additional papers will be read by Miss E. E. C. Jones and Prof. Boyd Dawkins. Visits to

Manchester educational institutions are being arranged for Wednesday and Friday afternoons.

IN view of the national crisis, all changes in the Regulations for Secondary Schools are postponed, and the Regulations in force for the school year 1914-15 are therefore continued by the Board of Education for the school year 1915-16. The Regulations for the Preliminary Education of Elementary-School Teachers in force for 1914-15 are similarly continued without change for 1915-16. In their administration of the Regulations the Board of Education will give every consideration to the special difficulties under which the work of any school or pupil-teacher centre is being conducted on account of national exigencies.

THE Board of Education regrets to give notice that, owing to the urgent demand for office accommodation for the purposes of the war, it has become necessary to close the reading-room of the Board of Education Library. The Board will, however, endeavour to meet the requirements of readers who have special occasion to refer to particular books contained in the Board's Library, and will provide facilities for consulting such books. Readers are requested to write beforehand to the librarian, indicating the books they require and the probable date of their visit.

THE Board of Education is following up its previous efforts towards national thrift. Special regulations (Cd. 7,989) for grants in aid of instruction for housewives in economical cookery have been issued and should provide a stimulus to the activities of local authorities. Circular 917 is also issued as a penny pamphlet entitled "Economy in Food: Some Suggestions for Simple and Nourishing Meals for the Home." The President of the Board supplies the introduction to this pamphlet, and says that *we must save money*, since the war is costing at least one shilling a day for each inhabitant of Great Britain; *we must consume less meat*, since supplies are smaller and the soldiers require more; *we must be careful about food*, since prices must be kept down; he sums up his advice in three phrases: buy economically, prepare carefully, avoid all waste. The pamphlet contains many suggestions regarding simple, nutritious meals, but we note one omission—there is no reference to the "hay box," which has been proved, by practical experience, to secure considerable economy in the preparation of food.

A CONFERENCE on "New Ideals in Education" was held at Stratford-on-Avon from August 14th to 21st. The meetings were largely attended, and several of the addresses and discussions were of conspicuous interest. The president, the Earl of Lytton, opened the conference proper on Monday, and was followed by Mr. Edmond Holmes in a paper on "Ideals of Life and Education—German and English," remarkable for vigorous argument and literary beauty. Prof. Millicent Mackenzie also spoke on "Ideals from Abroad." In the afternoon, under the chairmanship of the American Ambassador, Mr. Homer Lane discussed "Faults and Misdemeanours of Children," with special reference to the methods of self-government employed in the Little Commonwealth. The sessions on Tuesday were both occupied by the

Montessori Society. Dr. C. W. Kimmins analysed "Some Recent Montessori Experiments in England," while Miss Crouch and Mrs. Hutchinson discussed the introduction of Montessori methods into public elementary schools. On Wednesday morning, Mr. Christopher Turnor gave a highly important address on "New Movements in Rural Education"; in the afternoon Dr. York Trotter lectured on "The Place of Music in Education," with demonstrations by his pupils. On Thursday morning, Profs. T. P. Nunn and Bompas Smith discussed the relations between Freedom and Discipline. The afternoon session was given to Mothercraft and the preservation of infant life. On Friday morning, Messrs. Tunaley and Carpenter spoke upon the teaching of drawing, and Sir William Mather closed the conference with a valedictory address. A report of the proceedings of the conference is to be published later.

AN interesting pamphlet reaches us from Brisbane on State Education in Queensland. It is written by Mr. J. D. Story, under-secretary of the Department of Public Instruction, and has a foreword by the Hon. J. W. Blair, the Minister. Some of the most interesting parts of the report are connected with the fact that the population is very scattered. The policy of the department is that, if the child cannot come to the teacher, the teacher goes to the child. Thus, as auxiliaries to the full-time elementary schools, there is a system of travelling teachers (reminding us of the "circulating schools" of Wales in the eighteenth century), Saturday schools, week-end schools, house-to-house schools, part-time schools, and camp schools. The secondary-school system includes ten grammar-school centres, six high schools of more recent date, and six secondary departments attached to primary schools. Of these, the grammar and high schools lead on to Queensland University, which began work in 1911, and includes a training college. Some parts of the school system, such as fixed syllabuses and books published under authority, are probably passing phases, as they have been in the home country, and are destined to be superseded.

ANOTHER pamphlet on a smaller subject, but suggesting liveness in the educational affairs of the Commonwealth, comes to us from Western Australia, and is written by a schoolmaster in that colony. The writer is impressed by the way in which "the State cripples its children," by requiring them to sit for hours at a stretch in unsuitable desks. "Less sitting" is his remedy, and in pursuance thereof he has invented "standing benches without seats," but adjustable as to height. In each lesson during which the whole class now sits, only one half would sit, the other half standing at the said benches. The inventor claims that "the exercise of standing counteracts the evils of sitting, while the sitting affords a period of rest after standing." For ourselves, whilst we admit the possibility of relief in this way, we prefer to look to extended workshop and laboratory and out-of-door employments, in addition to regular physical exercises, as the true and natural solution of the problem. As education tends to become less and less exclusively bookish, so will the school become less and less a place for mere

reading and writing and listening. It will tend to become more and more a place for *doing*.

MR. GEORGE GEORGE has reported to the Education Board of Auckland, N.Z., upon the results of his thirteen years' work as director of technical education and manual training. In an almost virgin field he has, with the help of an enthusiastic staff, achieved noteworthy results. In 1902 there were 30 evening students and no day students, for whom accommodation was first provided in 1906. In 1914 there were 1620 evening students and 397 students at the Day Technical School; these figures refer solely to Auckland City. Centres for manual training and domestic science, technical and continuation classes, have been established in other centres of population. In 1914, 238 primary schools paid attention to elementary agriculture, nature study, and school gardening. An itinerant agricultural instructor spends one day per week in each of the four District High Schools. All kinds of handwork are now taught in 344 primary schools, as compared with 12 in 1902; and excellent specimens of the work of the children are photographically reproduced in the report.

THE Seddon Memorial Technical College, with its Technical High School, is a monument to Mr. George's labours. The school includes 207 boys and 190 girls, who have five possible courses of instruction: agricultural, commercial, domestic, scientific and technological, and mechanical and electrical engineering. The college building has proved inadequate during the past two years for the day school and for the special day and evening classes, and there is little doubt that the money required to make the necessary additions to the college buildings will be forthcoming when the war is over. The training given in the college is valued highly, and it is by no means uncommon to note in the advertisements in Auckland papers: "Technical College student preferred."

THE *Education Gazette*, South Australia, for July 13th contains a report of the twentieth annual conference of the South Australian Public School Teachers' Union. The president commented strongly upon proposals to appoint assistant inspectors of schools to the extent of half the inspectorate from the ranks of the junior and younger teachers in the State; he said that apparently the idea was either to economise or to "catch the inspector young" and train him. He instanced from the neighbouring State of Victoria one effect of such a scheme. A Victorian headmaster, on special service, inspected a small school in a distant part of the State. "The teacher was doing very good work, and I was able to give him a fine report. He told me that he was studying hard for his degree. He obtained it, and last April he walked into my school as an inspector—certainly not to examine my school, but in company with my district inspector, to gain some knowledge of how things should be done before going out as an inspector in his own district. He told me that he had not the slightest idea as to how a large school should be conducted." The president also noted one

of the grievances attached to the profession of teacher in South Australia. When a man has completed his course of training and is a duly certified teacher, it seems anomalous that he should from time to time be asked to pass in more subjects to secure personal classification. It is not the practice in any other profession. References were also made in the president's address to the importance of the question of registration of teachers.

THE requirements of Middlesex, so far as regards higher education, have been reported upon by the director, who states in the introduction to his report that every great war in modern times has been followed by changes in education. "When the war is over we must be ready in England to take advantage of the great opportunities which will present themselves. Good education of every kind will be more than ever necessary. One great danger that we have to fear for our schools is that any bureaucratic system should attempt to mould them all on the same lines. It is most desirable that there should be a large element of liberty and great freedom to experiment. This liberty and freedom should, I think, manifest itself in three ways: liberty to the school to develop on its own lines; freedom to the individual teacher to work on his own lines, provided that he falls in with the general scheme of work; freedom for the individual pupil to develop his own individuality, there being no attempt to mould all the pupils to one type." With such a spirit at work among the administrators of education, the schools and teachers of England should easily gain the greatest benefit from the changed outlook which will inevitably succeed the narrower outlook of the days which preceded the war.

THE Italian State Railways have just opened a London office at 12 Waterloo Place, Regent Street, S.W. This office is a thoroughly equipped information bureau, where particulars of every description concerning Italy may be obtained; the public are invited to avail themselves of the services of the expert staff and to utilise the varied material at their disposal, whether with the idea of visiting Italy, or for the purpose of obtaining information upon matters pertaining to that country. The railways issue circular tickets available for definite tours; for instance, a tour from Venice through Milan, Turin, Genoa, Pisa, and Florence, available for thirty days, costs, third class, £2 1s. 9d. This tour may be extended to forty-five days through Rome, Naples, Foggia, Ancona, Bologna, at a total cost of £2 19s. 7d.

In the United States in 1914 there were twenty-two million persons enrolled in educational institutions, and of these nineteen million were in elementary schools. One person per hundred attended college or university. The cost of education for the year was £150,000,000; and concerning this item the Commissioner of Education states:—"This is a relatively small amount when compared with other items of the public expense . . . it is less than one-third the nation's expenditure for alcoholic liquors; it is only a little over three times the estimated cost of admissions

to moving-picture theatres in the United States for the same year. Measured in terms of products of the soil, the United States spent somewhat more for education in 1914 than the value of its cotton crop, somewhat less than the value of its wheat crop, and less than half the value of the annual harvest of corn; while the nation's bill for education was less by nearly £20,000,000 than the value of the exports from the harbour of New York in the calendar year just passed."

WITH the issues of September 25th and October 2nd the *New Statesman* will publish in two supplements a monograph by Mrs. Sidney Webb, entitled "English Teachers and their Professional Organisations." Mrs. Webb will give the results of a prolonged investigation into the constitution and working of professional organisation among all grades of teachers of England and Wales.

SCHOOL dinners have acquired of late an increasing importance. In our issue for May, 1915, Mr. W. A. Newsome gave our readers the benefit of his experiences, and in the July number of the *A.M.A. Circular* Mr. J. Hart-Smith provides additional useful information on this subject. Mr. Hart-Smith provides school teas at 4d. each, and "each boy has as much tea, bread-and-butter and jam as he desires, and three cakes or buns." Last term there was a profit of 13s. 9d. on an income of £118 2s. 4d. In the same number of the *Circular* Mr. J. T. Rushworth gives an account of the establishment of a War Loan Savings Society among the masters and boys, worked by a committee of prefects and masters in about equal numbers. One of the main features of the work of the society will be to give each depositor interest on his deposit, however small, provided the interest "is measurable in coin of the realm." The society has made an enthusiastic commencement in this practical way of impressing upon the boys the pressing present national need for economy.

THE *Teachers' Guild Quarterly* for July contains an account of the opening of the new premises of the Guild by Sir Henry Miers, who commended the ideals of the Guild, since they tended to counteract the strong modern tendency to over-specialisation, and aimed at a continual effort towards the development of full and free intercourse among all sections of the teaching profession. He was glad to see that the Guild doors were open, not only to teachers, but to persons interested in education. It was stated at the ceremony that, owing to various unexpected circumstances, the expenses of the new premises and club had exceeded anticipations by £200, and the officers appealed to members and friends to subscribe towards this sum. The premises include eleven club bedrooms, a large room for meetings capable of holding 120 to 150 people, and three sets of offices, which, it is hoped, may be let to educational organisations.

THE *Clayesmorian* for July contains many interesting items of news, especially from the front. The war caused great disturbances at the Ecole de l'Isle de France, at Liancourt—the French "Clayesmore"; out of 110 boys only 15 presented themselves the first

term, and 40 the second term. At Claysmore itself last term the boys made their own beds. An old Claysmorian writes interestingly of his experiences while mine-sweeping; another says:—"The manual labour at school, although I am afraid I used to think it an awful bore, has helped me no end, and there is no doubt without that training I should not have been able to grasp things so quickly in practical work with the men" at the front; a third writes from Philadelphia:—"The great subject here is the war. America is tremendously pro-English and mildly militant. It sends sympathy, but shrinks from involvement. . . . England and her Allies will at last win, but they must be merciful in their exercise of justice. The harvest of death is terrible, terrible, before anyone can win. What we feel here is that if a great military genius should arise, it might do much to shorten the conquest."

SCOTTISH.

THE Scottish Universities (Emergency Power) Bill, which enables the university authorities to relax many of their statutory regulations to suit the war conditions, successfully passed through all its stages and received the Royal Assent. Sir Henry Craik, in supporting the Bill in the House of Commons, said that the Scottish universities had been for centuries linked with all the storm and stress of the national life, but never had they played their part more worthily than during the present crisis. Glasgow University alone had furnished more than 2,000 graduates and students to the Imperial Forces, while more than 250 students had taken service in munition works for the period of the war. The lady students in Queen Margaret's had not been behind, and more than 100 were engaged in hospitals and Red Cross work. The only opposition to the measure came from an Irishman, Mr. Lynch, M.P. for East Clare. He made the Bill the occasion for a speech on Scottish degeneracy, declaring that the national thought was hide-bound by conventions and traditions. He found the explanation in the neglect of Burns, whom he quoted, and misquoted. The *raison d'être* of the speech, however, only came out at the close, when he declared that Burns had by anticipation judged and condemned the present Government: "yon mixty-maxy, queer hotch-potch—a Coalition."

IN academic circles the provisions of the new Emergency Act for the universities have not been favourably received. Before anything can be done the four universities must take united and joint action. Their proposals must then be referred to the Committee of the Privy Council, who will report to his Majesty, who will approve the whole or part of their recommendations. The whole procedure is thus complicated and unwieldy in the extreme. Numerous cases are bound to arise which cannot be anticipated at any joint conference between the four universities, and relief in such instances may be delayed indefinitely. Even if all possible cases were foreseen it has hitherto been found almost impossible to get the universities to come to a common decision, as they seem to take a childish pleasure in frustrating each others' wishes.

For three years they have been negotiating regarding the conditions of a new preliminary examination ordinance, and have failed to arrive at any agreement. The same petty spirit is likely to be shown in dealing with cases under the new Act, as each university will be afraid of giving any advantage to its rivals.

At the annual distribution of prizes at the Edinburgh Provincial Demonstration School, Prof. Darroch said that too much stress ought not to be placed on the reports of H.M. inspectors. The teachers, after all, were the best judges of the progress of their pupils, and were alone capable of making allowance for weakness in certain classes and individuals. Prof. Darroch suggested for the benefit of the Education Department that one of the best ways of economising at the present moment was to reduce the number of inspectors, or to utilise them for teaching purposes in view of the scarcity of male teachers. The professor seems to think that inspectors would resent the latter proposal, but, as a matter of fact, several have already indicated their willingness to undertake work in schools in any capacity for which they are fitted. The baiting of inspectors is a favourite pastime with more than Prof. Darroch, but it is a peculiarly ignoble one, as, being civil servants, they are unable to hit back.

It can scarcely be maintained that museums in this country justify the expense of their upkeep. Even the best of them are apt to become lounge galleries, where there is much idle staring, but little serious observation. In America they order things better, and by means of lectures and classes they seek to make the treasures of the museum instructive and interesting to the masses of the people. The director of the Royal Scottish Museum, Sir F. Carlaw Martin, since taking over the duties of his office, has made many attempts to popularise the institution on American lines. His latest effort is to strengthen the connection between the museum and the school. School boards and teachers have been invited to utilise the museum in connection with the study of nature knowledge and science teaching. During the past session the museum was visited for this purpose by 348 classes with 8,877 pupils. Some classes study the collections entirely under the guidance of their own teachers, and undoubtedly this, given adequate knowledge on the part of the teachers, is the best way. Other classes have taken advantage of the services of demonstrators attached to the institution, and the tuition thus obtained is regarded as part of the school curriculum. A third set of pupils visited the museum at the direct instance of the Edinburgh School Board, in pursuance of their policy of encouraging visits to museums and art galleries.

SIR JOHN STRUTHERS issued a circular to school boards expressing the hope that they would do their utmost to facilitate the formation of the National Register by placing the schools under their management at the disposal of the local registration authority. He pointed out also that various associations of teachers, acting in co-operation with each other, had compiled a register of teachers prepared to undertake voluntary work during their vacation, and

he hoped that the various local authorities would utilise their services in connection with the preparation of the register. The joint committee of teachers responsible for framing the teachers' register issued a circular to the clerks of counties and burghs offering the services of teachers for this purpose, and many authorities arranged for the whole work of distributing and collecting the forms to be done by members of the profession. In Glasgow more than 1,000 volunteers came forward, and in other centres the response was equally satisfactory.

IRISH.

THE Queen's University, Belfast, is justly proud as a young University of its war record. In the absence of the Chancellor, Lord Shaftesbury, who is Brigadier-General in command of the 1st South-Western Mounted Brigade, the Vice-Chancellor, Rev. Dr. Hamilton, presided at the annual graduation ceremony in July, and stated that on the University's roll of honour were 400 names, including that of the principal chaplain of the Expeditionary Force, Brigadier-General Dr. Simms. He added three illustrations from recent occurrences to show what the University was doing:—(1) Three additional professors were spending the long vacation in the manufacture of ammunition; (2) thirty-five physicians and surgeons representing the Belfast Medical School had lately offered their services to the War Office to work together in a stationary or general hospital at the front; (3) the organic chemistry laboratories had commenced the preparation of drugs for war purposes, and many students had volunteered to work at this during the vacation. Three hundred and forty-five men had obtained commissions through the Officers Training Corps, and there were still 400 members in training. The War Office had also established in the University a school of training for young officers, and since September last 291 men had been trained for various battalions.

SINCE then the Senate of the Queen's University has passed rules making some form of military training compulsory for all male students. During the war they are to take a course of physical and military training of at least two hours a week for the first and second terms of the session, and to obtain a certificate of efficiency for it. There are to be no fees, but the certificate is to be compulsory for each of the faculties of arts, science, law, medicine, and commerce. The committee appointed to take this matter in hand are also instructed to consider whether, and how far, provision should be made for women students to be trained in ambulance work, sick nursing, and similar subjects.

THE Royal College of Science in Dublin is also busy during the vacation in war work. Under the direction of Prof. Jeffcott the engineering school has been manufacturing fuses for shells, and the chemical department has turned its attention to the manufacture of gases suitable for use in the field. Prof. Morgan, the head of the chemical department, a great authority on aniline dyes, has been appointed chairman of the Government Chemical Research Committee.

WELSH.

It is not by any means an uncommon thing for an old pupil of a school to join its staff as a teacher, and there are in Wales several teachers of various ranks from the university down who have married former pupils; but it is believed that the first case has arisen in which an old pupil of a school becomes one of its governors. At the July meeting of the governing body of Neath County School, the chairman, Alderman Hopkin Morgan, welcomed to the board the mayor of the town, Mr. Matthew Arnold, an old boy, and a resolution of cordial welcome was passed.

TEACHERS have enlisted in considerable numbers, and many who were unable to enlist have offered their services for work during the holidays, without in all cases being able to find positions in which they would be welcome. Unless skilled in metal work they were not wanted for shell-making, though many who were skilled have been doing excellent work. The hay harvest is over before the holidays except in specially backward parts of the country, and the corn harvest will generally fall too late for them to be of use; moreover, farmers can hardly be said to favour their employment. But the making of the National Register on August 15th provided them with an opportunity of being useful which they could take, and they offered their services in large numbers, in many cases rendering it needless to appeal to the other professional classes suggested as suitable workers in the Local Government Board's circular.

At a meeting of the Cardiff Registration Committee, held on July 26th, Alderman J. T. Richards, the Lord Mayor, expressed great disappointment that out of 840 odd teachers only 100 had volunteered, of whom eighteen would only be available after August 18th, when their services would be useless. There were 117 other volunteers, and 750 would be needed, in addition to the City Hall staff. These remarks have called forth a protest from the teachers, who point out that out of the 117, twenty were also teachers who had offered their services directly, so that the real number was 120 out of 843, a high proportion considering that the total included pupil-teachers; that two-thirds of the teachers were women, who could not undertake a door-to-door canvass in any part of the city; that sixty men were serving with the colours; that Cardiff teachers had endowed a bed in the Welsh War Hospital and subscribed £500 to the Prince of Wales's Fund, and were at present subscribing to the N.U.T. War Aid Fund; and many of the women were qualifying for Red Cross work. Moreover, many teachers had made early offers of help, but, receiving no reply, had made other arrangements for the holidays. Public recognition of teachers' patriotic action in offering their services has been made in many places—we may instance at random the Rhondda, Llanelly, Port Talbot, Newport, and Pontypridd—all within a comparatively short distance of Cardiff.

THE girls of the College, Pontypool, have made and sent away more than five hundred garments. These have gone to the families of Belgian soldiers

and sailors and to our own men, especially to those of the 2nd Monmouthshire Regiment.

THE REV. E. LORRIMER THOMAS, professor of Welsh at St. David's College, Lampeter, has accepted the living of Holywell. He is an old Oxford man, and the son of the late Canon Thomas, of Holyhead.

SOME notable successes by Welsh students are the forty-eighth place in the last Home Civil Service List, and the thirty-fourth in the Indian List, held by Messrs. W. E. H. Rhydderch, of Llandovery College, and L. Owen, of Friars School and University College, Bangor; and the D.Sc. of Birmingham University gained by Mr. E. Nanstone, an old boy of Neath County School.

LEWIS'S SCHOOL, Pengam, has a recently-formed cadet corps, numbering eighty boys, which is being trained by Sergeant-Major Blayton. The corps was recently inspected by Major G. A. Evans, who highly complimented the members and their instructor.

SPEAKING as a member of a deputation from the County School governors to the Pontypridd Education Committee, the headmaster, Mr. Rhys Morgan, advised that all pupils who were destined for the teaching profession should be sent to the secondary and not to the higher elementary school. To remedy the hardship to poor children, he recommended the adoption of free secondary education, the cost of which for Wales would be £30,000 a year.

THE STUDY OF ARISTOPHANES.

The Scholia on the Aves of Aristophanes, with an Introduction on the Origin, Development, Transmission, and Extant Sources of the Old Greek Commentary on his Comedies. Collected and edited by John Williams White. cxii+378 pp. (Ginn.) 14s. 6d.

THE scholia are the sources of most of the comments which modern scholars make on Aristophanes; yet we have never had a satisfactory edition of them. Most of us use Dübner's, which leaves much to be desired. Rutherford edited the scholia of R, and his work also has been criticised; but nothing seems to be wanting to this monumental edition of the "Aves," except a similar edition for the other plays. That would indeed be a *labor ærumnabilis*, and it is staggering to think how much work has gone to this book. There is an exact transcript, in minute detail, of V, all notes in R that are not in V, all scholia in Γ by the first hand that are not in V or R, all scholia in E that are not in V, R, or Γ; a collation with all variants from VGRTEMP, with some from Suidas; and on the opposite page, a restored text with notes.

A large number of new emendations are given, by the editors, Profs. H. Jackson, Capper, Wright, Gulick, and Cary, which are also tabulated in a convenient list on pp civ. ff. Prof. Jackson has twice made a clever suggestion without adding or dropping a single letter of the MS., and his others show an unusual care of the *ductus litterarum*. Prof. Gulick, on v. 17, by adding one letter, makes a verse fragment: *καὶ μικρὸς ὢν ἐκ τῶν πτερῶν τὴν σύστασιν ἔχει*, which might perhaps be completed by *μεγάλην*, with the required contrast to *μικρὸς*. On 303 we have an ingenious explanation of the group of nonsense letters, as being fragments of *δνοιάζου* in the next line, "copied from a MS. which had these lines crowded together"; 822

shows a neat restoration of three lines of Eupolis from the text of the scholion, and 1490 another of four lines of Menander.

The introduction, after a sketch of Alexandrian literary society, sets forth how the results of their studies in comedy have come down to us in the form of a Variorum commentary on Aristophanes. The works of the various commentators were gathered in this form by Didymus, and he was followed by others, the final recension being probably in the fourth or fifth century. Prof. White briefly analyses the nature of each scholar's comments, as shown by the tradition. Part of the great library was burnt in 47 B.C., when Cæsar was besieged in Alexandria, but the loss was clearly not serious. Prof. White next examines the finds of papyri in Egypt, with special reference to the commentaries.

Prof. White regards our scholia as derived from a large parchment codex, compiled by an unknown scholar in the fourth or fifth century, and containing more notes than are found in any existing MS.; this was the archetype of both text and commentary as we now have them. The papyrus remains appear to come from independent sources, both text and commentary.

This introduction is a good outline of Alexandrian scholarship, and we commend the book to teachers as a source of valuable illustrations.

DEMOCRATIC RUSSIA.

Russia and Democracy. By G. de Wesselitsky. viii+96 pp. (Heinemann.) 1s. net.

THIS volume, published under the auspices of the Central Association for National Patriotic Organisations, is the work of a notable Russian journalist, who for some fifteen years has been president of the Foreign Press Association in London. He has been in closest touch with great affairs for the past forty years, has known personally such men as Bismarck, Napoleon III., and Leo XIII., and has formed clear and original views of European politics. Throughout his career he has laboured persistently to foster the *entente* between Russia, France, and England, and he has become increasingly convinced of the peril which lay in Prussian diplomacy and arms.

The thesis of the book is simple. It is that Russia is essentially the most democratic country in the world, and that its apparent antagonism to democracy is all the work of a non-national Germanised bureaucracy which secured power in the eighteenth century and managed to maintain it down to the close of the nineteenth. This thesis is developed and supported by means of a rapid but brilliant survey of Russian history. It begins with a description of the primitive Slavonic village-community governed by the Mirs, or assemblies of heads of families. It then shows how these were welded into States of the republican type by the Scandinavian adventurers, Rurik and his successors, during the ninth and tenth centuries. Next, it traces the rise of the Tsardom owing to the Mongol invasions, and the alliance with the Byzantine Empire, whose headship of the Greek Church Russia inherited. Peter the Great and his Westernising policy is then discussed, for this opened the way for the entry of German influence. Under the weak and wicked successors of Peter, the German baronage of the Baltic provinces became dominant in the State; German adventurers poured in; the Court became Germanised by marriage alliances; education and research passed into German hands; Germans secured special commercial privileges, held most of the high commands in the army, filled the diplomatic service,

and ruled Russia for German ends. Catherine the Great (though herself of unmixed German descent) tried to emancipate Russia from the alien yoke. She achieved some success; but her work was all undone by her successors, Paul I. and Alexander I. Not until Alexander III. did a really national Emperor wear the Russian crown. He boldly reverted to Peter the Great's policy of an alliance with France, and broke the Germanic spell. The present Emperor, Nicholas II., has continued his father's national policy, and Russia is now purging herself of "the German canker."

Strict historical criticism would probably require some qualification of the generalisations in which this little volume is rich. But though it is written under the stress of strong political conviction rather than of the dispassionate spirit of scientific research, there can be no doubt that it is timely, suggestive, and valuable.

RECENT SCHOOL BOOKS ON PLANT LIFE.

- (1) *Wonders of Plant Life*. By F. M. and L. T. Duncan. Six books, 76-80 pp. each. (Frowde; Hodder and Stoughton.) 6d. each.
- (2) *The Study of Plants*. By T. W. Woodhead. 440 pp. (Clarendon Press.) 5s. 6d.
- (3) *Elementary Studies in Plant Life*. By F. E. Fritsch and E. J. Salisbury. xv+194 pp. (Bell.) 2s.
- (4) *Junior Botany*. By F. Cavers. xii+288 pp. (Clive.) 2s. 6d.
- (5) *Experimental Plant Physiology*. By Lucy E. Cox. vii+111 pp. (Longmans.) 2s. net.
- (6) *The Families of British Flowering Plants*. By W. B. Grove. vi+49 pp. (Manchester University Press; Longmans.) 1s. net.
- (7) *A First Book of School Gardening*. By A. Logan. vii+151 pp. (Macmillan.) 1s. 6d.
- (8) *A Book of Simple Gardening*. By Dorothy Lowe. viii+88 pp. (Cambridge University Press.) 2s. net.
- (9) *The Beginner's Garden Book*. By Allen French. viii+402 pp. (New York: The Macmillan Co.) 4s. 6d. net.
- (10) *Makers of Modern Agriculture*. By Wm. Macdonald. x+82 pp., with portrait. (Macmillan.) 2s. 6d. net.

SCHOOL books about plants fall more or less distinctly into three groups. In the first are the books having as their chief object the awakening of the pupil's sense of wonder and the appreciation of the beauty of common things. The aim of the second group is more directly educational. They deal with plants as material for the training of the observational and logical, rather than the æsthetic faculties. Books of the third kind take the point of view of the "practical" man who thinks of plants either as weeds or as things to be raised as crops for the market. Each of these groups is well represented among the books mentioned above.

(1) These little readers give simple but entertaining accounts of various aspects of plant life, and are illustrated attractively, so that they can scarcely fail to secure and maintain the interest of the young pupils for whom they are plainly intended. In spite of their simplicity, the books are in the main accurate, and no one will quarrel with the authors for saying that "the snowdrop is a wise little flower," and otherwise indulging somewhat freely in metaphor. The titles of the six parts are: (i) The story of the plants; (ii) Plants

and their children; (iii) Land and water plants; (iv) Plant traps and decoys; (v) Some curious plants; (vi) Plant friends and foes.

Nos. 2 to 6 are books which must be judged by their success in inculcating scientific method as much as by their presentation of facts. No. 2 reflects on every page the modern spirit of botany teaching in schools, and deserves to take front rank among textbooks of "senior local" standard. The author considers, and we agree with him, that botany courses should be directed, in the main, to the establishment of the fundamental principles of plant physiology, morphology being considered chiefly in relation to ecology. Framed on these lines, the book is not only admirably logical; it is also unusually interesting and stimulating. About one-quarter of the text is given up to ecology, which is handled in masterly fashion. The book is illustrated excellently.

Nos. 3 and 4 of our list are books frankly prepared to meet the requirements of the junior local examinations. In No. 3 the subject-matter is treated in relation to the seasons of the year. Ecology is not relegated to a special division of the book, but permeates the whole, with very happy effect. There is plenty of practical work, the style is easy and natural, the illustrations are good and numerous. Altogether, this is one of the soundest and most attractive books for beginners we have seen.

The outstanding feature of No. 4 is the large space—nearly one-quarter of the whole book—allotted to chemical and physical preliminaries. The rest of the volume is very reminiscent of other well-known books by the same author, and has in general the same admirable qualities. The "glowing splinter" test for oxygen, in the experiment on p. 118, is obviously doomed to failure. The book is strong in physiology, but unfortunately pays scarcely any attention to ecology.

Miss Cox's little book (5) forms an excellent elementary manual of laboratory work on the vegetative functions of plants, and will be a boon to many teachers and students. Its special value lies in the logical arrangement of the work—the inferences obtained from one experiment usually forming the starting point of the next. The aim, method, observations, and inferences of each experiment are clearly distinguished. It is perhaps worth while to point out that the well-known experiment on p. 48 is inconclusive, seeing that the covered portion of the leaf is deprived of air as well as of light.

(6) This "pocket synopsis" provides a very useful skeleton outline of Engler's system of classification, so far as it applies to the "families" (commonly known as "natural orders") of British flowering plants. The characters of the various larger groups are stated concisely, and the names given of the native and best-known foreign genera. The book is a good shilling's worth.

(7) The present urgent need for husbanding our national resources is in itself sufficient justification for the establishment of school gardens, and the teaching of scientific principles of agriculture wherever practicable. Mr. Logan's book makes it clear that in school gardening the educational virtues of nature-study may be usefully combined with the learning of a craft by pupils between the ages of twelve and sixteen. It gives detailed instructions, not only for the laying out of the garden, the preparation of the soil, and the raising of various crops, but also for experimental work which explains the reasons for all these operations.

(8) Miss Lowe's "Book of Simple Gardening" makes no attempt to teach scientific principle, but is

confined to directions for garden practice. It is written in a clear and interesting manner, and the author's enthusiasm can scarcely fail to rouse the keenness of her readers.

No. 9 is of American origin, but will be no less useful to English readers on that account, since it deals almost entirely with plants and methods equally popular on both sides of the Atlantic. It is an unusually attractive book, delightfully produced and illustrated, and while thoroughly practical, by no means ignores underlying theory.

(10) Dr. Macdonald's biographies of Jethro Tull, Coke of Norfolk, Arthur Young, John Sinclair, and Cyrus H. McCormick are a timely reminder of the world's indebtedness to these pioneers of scientific agriculture. They will make inspiring reading for many a young farmer.

RECENT SCHOOL BOOKS AND APPARATUS.

Modern Languages.

Lowland Scotch as Spoken in the Lower Strathearn District of Perthshire. By Sir James Wilson, K.C.S.I. With Foreword by Dr. W. A. Craigie. 276 pp. (Oxford University Press.) 5s. net.—In these days when racial characters, on one hand, are attracting scientific interest, and, on the other hand, are tending to get obliterated through the levelling processes of civilisation, it is a useful service to establish a record of any distinctive form of speech at a given time. Sir James Wilson has achieved this task for the Lowland Scotch of the present generation. It would seem to have been largely a labour of love, for the author has been recalling the words and phrases that formed part of the atmosphere in which he was himself brought up, but his early recollections have been carefully confirmed or corrected by mature observation, quickened by a parallel study of some of the native dialects of India. The district which has been chosen to represent Lowland Scotch is Lower Strathearn, lying between the Ochils and the Grampians, and thus bordering on the Keltic region of the north-west. This region may fairly be taken as typical, though Scotsmen from other parts of the Lowlands will find interesting variations from the particular dialect with which they are most familiar. Though Sir James Wilson has not ventured on any speculation on the relation of the different dialects to each other and to standard English, he has collected valuable material for such a philological study. He has wisely based his inquiry on the sounds of the language rather than on the written symbols, and the system of phonography he has adopted has the merit of being clear and definite. In addition to a dictionary of the words in use in the neighbourhood the author has supplied a chapter on the grammar, lists of proverbs and sayings and idiomatic expressions, examples of verses current among the people, and the names of popular songs and ballads. Some useful hints are given to those who may think of undertaking a similar task of investigation for other Scottish or English dialects. The inquirer is advised to seek out some of the oldest inhabitants, and as far as possible to observe their speech unawares. Teachers are recommended to avoid making children ashamed of local peculiarities of pronunciation and idiom, and rather to encourage them to notice the differences between their familiar speech and the standard English they are taught. In this way not only will the dialect have more chance of being preserved, but the children will be able to assume consciously whichever form of speech is adapted to their immediate purpose.

English.

The Literary Man's New Testament. By W. L. Courtney. 385 pp. (Chapman and Hall.) 10s. 6d.—Dr. Courtney's former volume is well known; it dealt with the Old Testament. The present volume must have been more difficult to write; but of the 385 pages only fifty come from the pen of the editor; the remainder are the familiar pages of the Authorised Version rearranged. Round the prefatory matter the interest centres, but although the editor thinks the chronological arrangement of New Testament writings new, it may be pointed out that it has been followed for both Testaments long ago. The present work is new in that it puts advanced thought on the New Testament into simple language; and the general reader is invited to discuss what experts have been for some time discussing: Did Paul "invent" Christianity, including the doctrine of immortality? Is the core of Christianity borrowed from Pagan mysteries and magic? Was Paul compelled to bow to the psychology of his day in order to prevent Christianity from dying as soon as it was born? These questions are the theme of Dr. Courtney's too-short essays. The book is not theological, nor even dogmatic, but it teems with interest; it can scarcely be recommended to the clergy, to whom, officially, much of it should be anathema; but, like "Ecce Homo" in its day, it is highly significant. The various epistles and gospels are prefaced by illuminating notes, and the whole of the editor's work is a marvel of conciseness; his own position is left unstated. It is a pity that even the faintest error in the printing of any Greek word should be allowed to creep into such a book.

(1) *Sophocles' "Electra" for Amateur Performance.* By E. Fogerty. 84 pp. (G. Allen.) 2s. 6d.

(2) *The Elder Brother.* By John Fletcher, edited by W. H. Draper. 75 pp. (Cambridge University Press.) 2s. 6d.

(3) *Plays: Six Plays by Contemporaries of Shakespeare.* Edited by C. B. Wheeler. 595 pp. (Oxford University Press.) 1s.

Miss Fogerty has edited other Greek plays; the attempt is interesting, successful, and, in stage fashion, learned, but it would be well, we think, if the editor gave us a much longer preface, not on the drama, but on the way to do it at home. The rough and ready translation, with its frequently unscannable lines and the air of modernity over the whole, may not matter in a girls' school (though classic mistresses nowadays shudder at anything not exact), but more austerity is needed if the play is to go home as "Samson" does, though we must add that Miss Fogerty claims "Electra" as inconceivably modern. The dressing up in Greek raiment and the chanting of a few Gregorians is always interesting, but it is all unreal, and, unless done very well, is cheap. The only excuse is that there are said to be so few plays that children can act; and undoubtedly children's acting ought to be encouraged. A more beautiful translation, a few good photographs of the play well staged, and a much longer preface would improve this book greatly, always supposing that the "Electra" is a suitable play for girls of thirteen to act.

The other volume ("The Elder Brother"), intended for boys, is quite clean and its verse is fine; it contains a good deal that boys will like. But it wants good acting and speaking, and here again it is rather too hard of Mr. Draper to suppose that in all schools you can find a stage-manager who is capable of setting this play.

As for the six plays in the volume of the World's Classics, one would fain hope that readers may, through this and similar editions, get to know "The Duchess

of Malfi" and "Philaster." The preface is bold; and might be bolder still. We would plead for an Elizabethan play with more lyrics in it than appear here; but it would be difficult to find fault with the choice on the score of worth.

History.

The People in the Making. By Stanley Leathes. xxiv+295 pp. (Heinemann.) 2s. 6d.—Mr. Stanley Leathes, an experienced university lecturer and one of the editors of the "Cambridge Modern History," has felt himself moved to write a social history of England for schools, of which this is the first volume out of three. The impulse to write this book apparently arose within the limits of Mr. Leathes's own home, for the work is dedicated to "Sylvia and Lillian." It could not have had a better origin, for no one writing for his own children would willingly commit to paper the heavy commonplaces which he would conscientiously impart to other people's progeny.

This book is intended to be a companion to the ordinary text-book of English History—a book of information, inspiration, and delight to young folk in the middle period of their school career. It is well fitted to fulfil its purpose. It is clearly printed, copiously illustrated with prints taken from original and really illuminating sources, and it is written with distinction and charm. The eleven chapters of which it is composed deal with such topics as social life, architecture, agriculture, methods of warfare, commerce, industry, religion, and education. The period covered ends with the Renaissance. The second volume is expected to carry the story down to the time of the French Revolution, leaving the nineteenth century to be treated in the third volume.

A Short History of Modern Europe. By James Oliphant. xiv+479 pp. (Dent.) 3s. 6d.—This useful book covers the period 1450–1915. It is virtually an epitome of the twelve volumes of the Cambridge Modern History, which it follows with remarkable fidelity, both in subject-matter and arrangement. It is very convenient to have the main findings of that large and authoritative work presented in so concise and convenient a form. Like its model, it presents, not a connected narrative, but a series of short essays (137 in all), upon the leading topics of the period. They are grouped into ten "books," corresponding to the main divisions of the four-and-a-half centuries under review. Taken together, they leave very few important matters untouched. They are well written, clear and interesting, and marvels of condensation.

This topical method of dealing with history has, of course, its disadvantages. There is no chronological flow, no continuity of movement. It tends to leave a number of scattered impressions rather than a co-ordinated picture. Hence it would be well that those who use this book either should have some preliminary acquaintance with the outlines of modern history, or should have before them as they read a good chronological chart. The book, in fact, will be specially valuable as a companion to the ordinary illustrated and annotated text-book in which a continuous narrative is presented, for it contains no maps, no illustrations, no references, no bibliographies, no genealogical tables, and no index, except one of persons. Hence a student who takes it as his sole source of information will find that he lacks some essential apparatus.

Black's History Pictures. Selected and edited by G. H. Reed. Set III.: The Tudor Period. (Black.) 10d. net.—This portfolio of history pictures contains

some seventy-five illustrations of the Tudor period. They include "portraits of eminent men, pictures of battles, political events, dress, pastime and occupations, photographs or sketches of arms, relics, clothes, ruins, sites, buildings of architectural merit, plans and maps." They are bound together in a special file which enables them to be removed individually and replaced at will, so that they are readily available for exhibition or for circulation in class. Accompanying them are instructions for use, explanatory notes, together with questions and exercises based upon them. They form a valuable supplement to the historical text-book. Our only adverse criticism is that on some sheets too many illustrations are crowded, and that both sides of each sheet are filled.

Geography.

Philips' Large Scale Strategic War Maps. Edited by George Philip, assisted by a Military Expert. Size, 48×37 in. (1) Western Area, 10 miles=1 in.; (2) Central and Eastern Area, 18 miles=1 in.; (3) Southern Area, 18 miles=1 in. (Philip.) Paper, 2s. 6d. net; cloth to fold or with roller to hand, 6s. net, each.—These three maps should be useful, especially to those people who have a passion for sticking flags on maps. Each map indicates all manner of fortified places, airship depôts, wireless stations, railways and roads, forests, rivers and canals. To each there is added a booklet containing an exhaustive index of place names, well over 5000 in number. No. 1 includes Paris, Strassburg, Cologne; No. 2 stretches from the Rhine beyond the Vistula to the longitude of Lemberg, and north of the latitude of Buda-Pest; No. 3 covers Europe south of No. 2 so as to include Albania. There are useful inset maps. These three maps provide excellent opportunities for following the various campaigns, especially as they have been compiled from official sources.

First Books of Science. Geography of the British Isles. By W. Maclean Carey. Pp. 169+vi. Maps, diagrams, and illustrations. (Macmillan.) 1s. 6d.—The information in this book is sound, the maps, diagrams, etc., are of the general excellence which is characteristic of the series. Mr. Carey makes use, in simple fashion, of a geological basis for his analysis of the British Islands into their component parts, and consequently the whole treatment is coherent. The pupil who knows this book will possess a very considerable acquaintance with the home country, for it contains a very large number of topographical names and a first glance at practically every important element in the geography of the country. For junior and preliminary candidates the text seems rather compact, which will provide the teacher with ample opportunity for class-work. Three minor points should be mentioned, Fig. 11 (British rainfall) is very complicated, and Fig. 36, though simple in appearance, is really difficult to grasp, while the legend to Fig. 13, "Box Hill and the Mole Gap," is rather misleading, since what is apparently the gap is really the scarp face of the Downs and the Weald below it; the Mole Valley in the foreground does not present the idea of a gap.

Mathematics.

Indian Mathematics. By G. R. Kaye. 73 pp. (Calcutta and Simla: Thacker, Spink and Co.).—This sketch of the history of Indian mathematics, though brief, is packed with information which clearly can have only been brought together after much

laborious investigation. The net result of Mr. Kaye's researches is to discredit the opinions promulgated by the earlier Orientalists regarding the antiquity and value of the contributions of Indian mathematical knowledge. It now appears that there is no mathematical work of a date much earlier than 200 A.D., and that all the rules found in the books of writers such as Aryabhata or Brahmagupta can be traced to external sources—in the majority of cases Greek, but sometimes Chinese. It appears that even the ascription to India of the credit of inventing *place value* in numerical notation has no foundation in fact. There is no doubt, however, that although the Indian mathematicians did not originate the problems which they considered, they did cultivate certain branches of mathematics with some degree of success. This is most evident in connection with indeterminate equations, where the Indian works record distinct advances on what is left of the Greek analysis. Mr. Kaye has added greatly to the interest of his sketch by appending extracts from the texts and seventy-six examples, of which the following may serve to give a taste of the quality:—

"He who distinctly knows addition and the rest of the twenty operations and the eight processes, including measurement by shadows, is a mathematician" (Brahmagupta).

"Tell me quickly, mathematician, two numbers such that the cube root of half the sum of their product and the smaller number, and the square root of the sum of their squares, and those extracted from the sum and difference increased by two, and that extracted from the difference of their squares added to eight, being all five added together may yield a square—excepting, however, six and eight?" (Bhaskara).

"Thus ends the section of devilishly difficult problems" (Mahavira).

Science and Technology.

Chemistry. By W. H. Ratcliffe. Part i., 266 pp. 3s. Part ii., 116 pp. 1s. 6d. (University of London Press; Hodder and Stoughton.)—Part i. of this book contains an account of the preparation and properties of the commoner elements and their compounds, interspersed with the necessary outlines of chemical theory. Part ii., the practical experimental section, is bound separately, so that it can be taken by the student into the laboratory. Anyone familiar with the habits of boys will recognise that this division is scarcely likely to prove an unmixed blessing. The author uses chemical formulæ at the very outset, without any attempt to explain their meaning; he further makes use of schemes for revision at the end of each chapter in which formulæ and arrows figure extensively. Whilst these aids may certainly facilitate the cramming of students for examination, they are open to serious objection educationally. The course of work embraced by the book covers two years, and presupposes a slight acquaintance with the rudiments of chemistry. The practical work is sound so far as it goes, but the author might have included an outline of qualitative analysis.

Miscellaneous.

The Girls' School Year Book (Public Schools) 1915. xliv+655 pp. (Year Book Press.) 3s. 6d. net.—The editor of this useful annual book of reference has been very successful in the task he has set himself, "to provide a record of all matters of interest to parents, schoolmistresses, and girls in connection with secondary education." The second part deserves

special attention; it contains much useful information referring to professions and employments open to women, and should prove invaluable to schoolmistresses trying to find suitable avocations for the girls they have educated. No girls' school can afford to be without copies of this attractive year book.

EDUCATIONAL BOOKS PUBLISHED DURING JULY, 1915.

(Compiled from Information provided by the Publishers.)

Modern Languages.

"The Modern Language Review." Vol. x., July, 1915, No. 3. (Cambridge University Press.) 4s. net.
"Mon Première Livre de Français." By F. M. S. Batchelor. 182 pp. 2s. 6d. Phonetic Transcript of Chapters i.-xv. 44 pp. 1s. 6d. Complete with phonetic transcript. 3s. 6d. (Clarendon Press.)

French Wall Pictures: "Le Verger" (coloured). 5s. net folded; 6s. net on rollers. "La Rue" (uncoloured). "Le Marché" (uncoloured). By E. A. Pike. 2s. 6d. net folded; 3s. 6d. net on rollers. (Clarendon Press.)

A. E. C.: "Ma Première Visite à Paris." New and enlarged edition, with exercises (22 pp.). By Miss E. R. Wyatt. 128 pp. (Clarendon Press.) 1s. 6d.

"Aims and Methods in the Teaching of English." By Arnold Smith. 184 pp. 2s. net. "The Teaching of Modern Foreign Languages." By Hardress O'Grady. 108 pp. 1s. net. (Constable.) (Handbooks on the Art of Teaching.)

Prosper Mérimée: "Tamango." Edited by R. R. N. Baron. 64 pp. (Mills and Boon.) 4d. net.

"Senior Passages for Translation into French." By A. R. Florian. 160 pp. (Rivington.) 2s.

Classics.

"More Latin and English Idiom: an Object-lesson from Livy xxxiv. 1-8." By H. Darnley Naylor. viii+220 pp. (Cambridge University Press.) 4s. 6d. net.

"The Olynthiac Speeches of Demosthenes." By J. M. Macgregor. lii+102 pp. (Cambridge University Press.) 2s. 6d. net.

"On the Teaching of Latin." By F. R. Dale. 112 pp. (Constable.) 1s. net. (Handbooks on the Art of Teaching.)

"Companion to Horace and his Poetry." Full notes on Latin quotations, with glossary, schemes of metres and conditions, and two maps. By J. B. Chapman. 144 pp. (Harrap.) 1s.

Jack's School Pictures. 29×35 inches. Ten subjects in Classical section. (Jack.) 1s. 6d. each.

"The Eclogues and Georgics of Virgil." Translated from the Latin into English Prose. By J. W. Mackail. New edition, revised. (Longmans.) Cloth, gilt top, 2s. net; leather, 3s. net.

"Rivington's Graded First Latin Books." A new and modern set of six cheap books for beginners in Latin. Containing Latin into English and English into Latin Lessons, with Grammar and Accidence, and a Latin-English and an English-Latin Vocabulary. 156 pp. (Rivington.) 1s.

English.

Milton: "Paradise Lost, III." Edited by C. B. Wheeler. 60 pp. (Clarendon Press.) 1s. 6d.

Longfellow: "Evangeline." 74 pp. Paper covers,

6d.; cloth, 8d. "Evangeline" and "Hiawatha." 214 pp. Cloth, 1s. 4d. (Clarendon Press.) (Oxford Plain Texts.)

Shakespeare: "Twelfth Night." "Julius Cæsar." "Macbeth." Edited by G. S. Gordon. (Clarendon Press.) 1s. net each.

The Thompson Seton Readers: I. "The Biography of a Silver Fox." 127 pp. II. "Monarch, the Big Bear." 128 pp. III. "The Slum Cat." 135 pp. IV. "The Little Warhorse." 119 pp. V. "The Legend of the White Reindeer." 125 pp. By Ernest Thompson Seton. (Constable.) 1s. net each.

The Westminster Shakespeare: School edition:—I. "Romeo and Juliet." II. "As You Like It." III. "Merchant of Venice." IV. "Macbeth." V. "Julius Cæsar." With historical introduction and note on reading aloud and full glossary. By J. W. Mackail. (Constable.) 1s. 4d. each.

Heath's Shakespeare: "Romeo and Juliet." Edited by Dr. Law. 224 pp. (Heath.) 1s. 6d.

"Selections from Malory." By A. M. Mackenzie. 112 pp. (Heath.) 1s. 3d.

"First Steps in English Grammar." By Frank Ritchie. (Longmans.) 1s.

"English Poetry for Young Students." Edited by W. T. Webb. 136 pp. (Macmillan.) 1s. net.

"English Grammar." With parsing and analysis. By H. G. Smith and G. H. Ball. 140 pp. (Mills and Boon.) 1s. 6d.

"English Composition." Including précis and paraphrase. By H. G. Smith and G. H. Ball. 100 pp. (Mills and Boon.) 1s.

"Francis Chantrey: Donkey-Boy and Sculptor." By Harold Armitage. 188 pp. (Mills and Boon.) 1s. and 2s. 6d.

Marlowe: "Dr. Faustus and Part i. of Goethe's Faust." Translated by John Anster. With an introduction by Sir Adolphus Ward, and notes by C. B. Wheeler. 323 pp. (Oxford University Press.) 2s. 6d.

Dufferin: "Letters from High Latitudes." With an introduction by R. W. Macan, and notes by F. A. Cavenagh. 358 pp. (Oxford University Press.) 2s. 6d.

"The Arabian Nights." From Lane's translation. 742 pp.+46 illustrations, by A. B. Houghton and others. (Oxford University Press.) 1s. 6d. net and 2s. net.

"Macaulay's Lays of Ancient Rome." With a full historical introduction and text containing references to the introduction. By William Edwards. 214 pp. (Rivington.) 1s. 6d. net.

History.

"A Picture Book of British History." Vol. ii., 1485-1688. By S. C. Roberts. xii+70 pp. (Cambridge University Press.) 3s. 6d. net.

"The Story of Lord Roberts." By Harold F. B. Wheeler. 288 pp. (Harrap.) 3s. 6d. net.

"Wales." By Gilbert Stone. (Great Nations Series.) 490 pp. (Harrap.) 7s. 6d. net.

"Mediaeval Italy." By H. B. Cotterill. (Great Nations Series.) 580 pp. (Harrap.) 7s. 6d. net.

"Robert Louis Stevenson." By Amy Cruse. (Heroes of All Time.) 192 pp. (Harrap.) 1s.

"Queen Victoria." By E. Gordon Browne. (Heroes of All Time.) 192 pp. (Harrap.) 1s.

"In Victorian Times." By Edith L. Elias. 250 pp. (Harrap.) 1s. 6d.

"Serbia: Her People, History, and Aspirations." By Woislav M. Petrovitch. 288 pp. (Harrap.) 3s. 6d. net.

"Jack's School Pictures." 29×35 inches. Ten subjects in Historical section. (Jack.) 1s. 6d. each, not net.

"Chart of General History, Ancient and Modern." Drawn up at Grahamstown Training College, South Africa. On sheet folded. (Longmans.) 1s.

Then and Now Stories: Senior, No. 15, "The British Empire." By J. H. Roberts. 104 pp. (Macmillan.) Sewed, 5d.; cloth, 6d.

"The German War of 1914." Illustrated by Documents of European History, 1815-1915. By J. R. H. O'Regan. 114 pp. (Oxford University Press.) 1s. 6d.

Geography.

Black's Travel Pictures: VII. "North America." VIII. "Africa." IX. "South America." Edited by Robert J. Finch. Each set contains 48 carefully selected pictures; 24 in colour from water-colours painted on the spot; and 24 in black and white from photographs. In special detachable file-portfolios. Size, 11×9 inches. (Black.) 10d. per set.

"The Beginner's Regional Geography: British Isles." By J. B. Reynolds. (Black.) 1s. per volume.

"The North-west and North-east Passages, 1576-1611." By Philip F. Alexander. xx+212 pp. (Cambridge University Press.) 2s. 6d. net.

"Stories of Exploration and Discovery." By Arthur B. Archer. xii+198 pp. (Cambridge University Press.) 2s. 6d. net.

"An Industrial Geography of Britain." By W. J. Claxton. 144 pp. (Harrap.) 9d.

"Jack's School Pictures." 29×35 inches. Ten subjects in Geographical section. (Jack.) 1s. 6d. each, not net.

"Earth Lore." An elementary introduction to Physical Geography. By T. Franklin and E. R. Shearmur. 40 pp.+4 maps+30 diagrams. (Johnston.) 7d. net.

"Atlas Geography of India." By B. C. Wallis. 20 pp. (Macmillan.) 8d. net.

Mathematics.

"Arithmetic." By C. Godfrey and E. A. Price. xiv+468 pp. (Cambridge University Press.) Complete with Answers, 4s.; without Answers, 3s. 6d.; and in parts.

"The Cambridge Elementary Arithmetics." Teacher's Book, II.; Teacher's Book, III. By J. H. Webster. ii+96 pp.; ii+112 pp. (Cambridge University Press.) 1s. 3d. net; 1s. 6d. net.

"A Text-book on Practical Mathematics for Advanced Technical Students." By H. Leslie Mann. (Longmans.) 7s. 6d. net.

"Revision Papers in Algebra." By W. G. Borchardt. 200 pp. (Rivington.) 1s. 6d.; with Answers, 2s.

Science and Technology.

"Experimental Harmonic Motion. A Manual for the Laboratory." By G. F. C. Searle. x+92 pp. (Cambridge University Press.) 4s. 6d. net.

"The Study of Plants (with over 200 illustrations). An Introduction to Botany and Plant Ecology." By T. W. Woodhead. 440 pp. (Clarendon Press.) 5s. 6d.

Thomas H. Huxley: "Lessons in Elementary Physiology." New edition, thoroughly revised by Joseph Barcroft. 628 pp. (Macmillan.) 4s. 6d.

"Introduction to Heat." By Arthur R. Laws and George W. Todd. 224 pp. (Mills and Boon.) 2s. 6d.

Pedagogy.

"Character and Intelligence. An Attempt at an Exact Study of Character. Being a Thesis approved for the Degree of Doctor of Science in the University

of London." By Edward Webb. x+100 pp. (Cambridge University Press.) 5s. net.

"Teaching: Its Nature and Varieties." By B. Dumville. viii+448 pp. (Clive.) 4s. 6d.

I. "Aims and Methods in the Teaching of English." By Arnold Smith. 184 pp. 2s. net. II. "The Teaching of Modern Foreign Languages." By Hardress O'Grady. 108 pp. 1s. net. III. "Cottage Gardening for Schools." By G. H. Taylor. 188 pp. 2s. net. IV. "On the Teaching of Latin." By F. R. Dale. 112 pp. 1s. net. V. "Montessori Examined." By W. H. Kilpatrick. 96 pp. 1s. net. VI. "Class-room Phonetics." By Hardress O'Grady. 79 pp. 1s. net. (Constable.) Handbooks on the Art of Teaching.

Art.

"A Text-book on the History of Painting." By John C. Van Dyke. New edition. (Longmans.) 6s. net.

Miscellaneous.

"University of Cambridge Higher Local Examination and Examination for Certificates of Proficiency in Modern Languages and Religious Knowledge. Class List and Supplementary Tables, June, 1915." 42 pp. (Cambridge University Press.) 1s.

"Regulations of the Oxford and Cambridge Schools Examination Board for the Year 1916." 92 pp. (Cambridge University Press.) 1s. net.

"University of Cambridge. Higher Local Examination and Certificates of Proficiency in Modern Languages Examination Papers, June, 1915, with Lists of Syndics and Examiners, to which are added The Regulations for the Examinations in December, 1915, and June, 1916." (Cambridge University Press.)

"Matriculation Latin Papers, January, 1905-June, 1915, with full Solutions to the Last Paper, Notabilia, and Illustrative Sentences for Latin Prose." 124 pp. (Clive.) 1s. 6d.

"Matriculation Model Answers in Latin, September, 1909-June, 1915." 136 pp. (Clive.) 2s.

"Matriculation History and Geography Papers, 1910-1915, and Model Answers to the Paper of June, 1915." 84 pp. (Clive.) 1s. 6d.

"Jolly Book of Boxcraft." By Patten Beard. 272 pp. (Harrap.) 3s. 6d. net.

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"Myths of Ancient Egypt." By Lewis Spence. 400 pp. (Harrap.) 7s. 6d. net.

Holder for Jack's School Pictures. For fixing on blackboard or easel. (Jack.) 3s. 6d. net.

"Alice Otley, First Headmistress of the Worcester High School for Girls, 1883-1912." Compiled by Mary E. James. With an introduction by the Bishop of Worcester. Second and cheaper edition. (Longmans.) 2s. 6d. net.

"The Girls' School Year Book, 1915." xlv+658 pp. (The Year Book Press.) 3s. 6d. net.

"To the School at War." Unison Song. Composed by Arthur M. Goodhart. 8 pp. (The Year Book Press.) 3d.

CORRESPONDENCE.

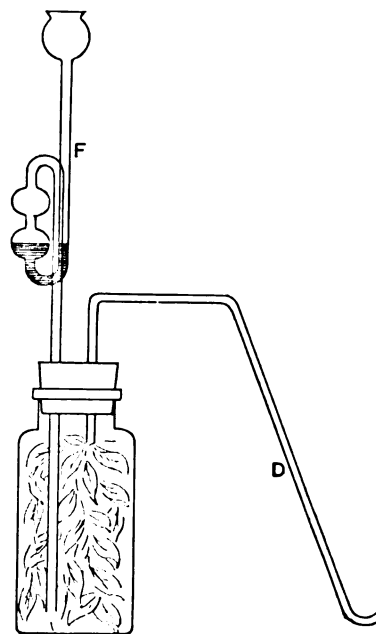
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A Method of Showing the Effect of Photosynthesis on the Surrounding Air.

ALMOST every text-book of botany explains how the evolution of oxygen during photosynthesis by *Elodea* or some other submerged water-plant may be shown experimentally. I have not, however, seen any description of a satisfactory way of demonstrating the abstraction of carbon dioxide from the surrounding atmosphere, and the liberation of oxygen, during photosynthesis by aerial leaves. Naturally, the replacement by oxygen of the small amount (0.03 per cent.) of carbon dioxide in

ordinary air does not give rise to any very striking difference in properties. The action of green leaves upon expired air from the lungs is, however, sufficiently marked to furnish an instructive practical exercise for students. Since this gas contains 4 per cent. of carbon dioxide and only 16½ per cent. of oxygen, it causes an immediate turbidity in lime water, and fails to support the combustion of a taper. The replacement of the carbon dioxide of expired air by oxygen gives a mixture which contains practically the same proportion of oxygen as ordinary atmospheric air, and has no action on lime water.

I find that the exchange of the carbon dioxide of expired air for oxygen during photosynthesis by aerial leaves can be shown easily by means of the simple apparatus illustrated. The bottle is loosely packed with green leaves, the cork or rubber stopper (fitted with thistle funnel and delivery tube as shown) is inserted, and the air replaced by air blown from the lungs through the funnel F for half a minute or so. A sample of the air now in the bottle may be collected by putting the end of the delivery tube D in the pneumatic trough under a jar of water and continuing to blow. The sample will be found to turn lime water milky at once, and to extinguish the flame of a taper. The delivery tube is then plugged (the water in the bend of the funnel acts as a further seal), and the apparatus is placed in bright light for several hours. The time required naturally varies according to the



kind of leaf used. The change in properties may then be shown in a small sample of the gas, expelled from the bottle by pouring water down the funnel after removal of the plug from D, and collected over water. It now fails to turn lime water milky, and it supports combustion.

The same apparatus may be used to show the reverse effects of respiration by leaves in the dark. The bottle is charged with ordinary atmospheric air (by filling with water and then emptying) before the leaves and cork are put in, and the arrangement sealed as before. Or it may be put into the dark immediately after the previous experiment, the bottle still containing the gas (a sample of which has just been tested) resulting from the action of assimilating leaves upon expired air. After twenty-four hours, or less, in the dark, air expelled from the bottle turns lime water milky at once, and fails to support combustion.

The method, with certain refinements, could no doubt be made to yield interesting information on the relative rates of photosynthesis by the leaves of different plants, if known areas of each kind of leaf were equally exposed to light in bottles of the same (known) capacity placed side by side, and the amount of oxygen liberated during a certain time determined by analysis of samples of the air. It would be interesting to correlate such results with the relative rates of transpiration of similar leaves. E. STENHOUSE.

Municipal Technical School, Rochdale.

English History in Schools.

A CORRESPONDENT in the July issue of THE SCHOOL WORLD complains that writers and teachers of English history conceal the great movements and influences powerfully controlling the destinies of a nation by a superabundance of irrelevant and pointless detail. "We cannot hope," he says, "to get sound history teaching in our schools until the writers of our text-books realise that what is wanted is a narrative of the progress of the nation, a narrative which is clear and connected, which keeps the main threads of history well in hand, which lays proper emphasis on the really important points, and maintains a proper proportion in the amount of space allotted to the various topics."

This warning to the writers of text-books applies with equal force to teachers in their oral lessons. For another reason, too, teachers of history are being compelled to consider their plans of work. Recent discussions of the Modern Language Association show that modern language teachers are anxious that their pupils should know more of the history of Europe, and it is clearly desirable that if they are going to give such teaching, they should give it with proper relation to the scheme adopted for the teaching of English history. It would be a gain to the pupil if, when the English history master is taking with him the story of the Napoleonic wars as they affect English history, the French master should reinforce the lesson by making Napoleon, or some literature dealing with him, the subject-matter of the French lesson. But this can only be done if the history teacher has a well-defined scheme of work.

An attempt is made here to plan a syllabus of English history for a four years' course in a school which allows three lessons a week and one hour's preparation to this not unimportant part of a boy's education. The subject-matter only is dealt with, not the method of instruction. Whether "it lays proper emphasis on the really important points and maintains a proper proportion in the amount of space allotted to the various topics" is what the writer is anxious to discover.

I. FIRST YEAR (AGE 12-13 YEARS). ENGLISH HISTORY TO 1485.

Britain under the Romans (3 lessons).—What the Roman Empire was. Life in Roman Britain. Roman towns, camps, walls, cultivation, roads.

The Coming of the Anglo-Saxons (4 lessons).—Who the Angles and Saxons were. Their settlements and customs. How other Teutonic tribes invaded other parts of the Empire.

The Christian Mission (3 lessons).—What Christianity and the Church meant to the Anglo-Saxons. Stories (from Bede) of Augustine, Paulinus, Cuthbert, etc.

The Danish Invasions and the Uniting of England (4 lessons).—The Danes and their ravages. The work of King Alfred. The Danish settlements. King Canute. The settlements of Northmen on the Continent.

The Norman Conquest (4 lessons).—How Anglo-Saxon life developed before the Normans came. The difference that the Norman Conquest made.

Life in Norman England (10 lessons).—Feudalism. The king and his duties. Castles. Monasteries. The struggle of King and Archbishop (and of Pope and Emperor). Life on a Norman manor.

Henry II. and his Rule (3 lessons).—The Angevin Empire. Struggles with French King. Henry's work in England and Ireland. How a criminal was dealt with.

The Crusades (10 lessons).—What a Crusade was. The Crusading Orders. Richard's Crusade. General results of Crusades on East and West.

The King and his Power (4 lessons).—Definition of a good king and a bad king. John and Henry III. as bad kings. Edward I. as a good king. How Parliament came to be.

Wales and Scotland (6 lessons).—The conquest of Wales. The attempted conquest of Scotland. Balliol, Wallace, Bruce.

The French War (15 lessons).—Reasons and excuses for the war. The age of chivalry. The ideals of chivalry. Crecy and Poitiers. The free companies. The Black Prince, Chandos, du Guesclin. Froissart and his book.

English Life in Fourteenth Century (8 lessons).—Life in town and country. Trade. Pilgrims and Chaucer. Black Death and Peasants' rebellion. Papal power and John Wyclif.

The New French War (5 lessons).—Henry V.'s opportunity and success. The French revival. Joan of Arc. Effects of Hundred Years' War on England and France.

The End of Medieval England (5 lessons).—Wars of Roses. Disorder and cruelty. Warwick the King-maker. Need of new ideals and motives.

Books studied in class: Bede's History (Blackie's English Texts); Scott, "Tales of a Grandfather" (Macmillan's Texts); Froissart Chronicle (Simplified edition in Everyman's Library).

The course is planned out so that several weeks of the last term of each year are left free for revision.

II. SECOND YEAR (AGE 13-14 YEARS). ENGLISH HISTORY, 1485-1660.

The Geographical Discoveries (6 lessons).—Prince Henry of Portugal, Diaz, Vasco da Gama, Columbus, Cabot, Magellan, etc.

The Spanish Conquest in America (9 lessons).—Cortez in Mexico. Pizarro in Peru. Readings from Prescott.

The Forming of the Great Nations (3 lessons).—Ferdinand and Isabella. The unity of France. Want of unity in Italy and Germany. Henry VII.'s ways of governing England.

The New Learning, etc. (4 lessons).—What a school was like in Renaissance times. Latin and Greek. Some incidents from life of Erasmus. The Italian artists.

Henry VIII. and the Beginnings of Reformation (9 lessons).—Wolsey and his significance. Luther. The King's divorce. Anti-papal legislation. Execution of More, etc. Dissolution of monasteries.

Protector Somerset and Social Difficulties (2 lessons).—Sheep-farming and enclosures. Kett's rebellion.

The Problem of Religion (4 lessons).—Changes of Edward's reign. The Prayer Book. The Protestant martyrs of Mary's reign. The Elizabethan settlement.

Elizabethan Seamen (9 lessons).—Work of Hawkins, Drake, Frobisher, Davis, Grenville, Gilbert, Raleigh.

The Wars of Religion (9 lessons).—Mary of Scots and John Knox. The Huguenots and St. Bartholomew's. The rebellion of the Netherlands—Alva, Parma, William of Orange. Counter-Reformation (Jesuits and Holy Inquisition).

The Crisis of the Struggle (6 lessons).—The Catholic League and Henry of Navarre. Armada. Last voyages of Grenville, Hawkins, and Drake. Ivory. Declaration of Nantes.

Life in Elizabethan England (3 lessons).—The Queen's Court. Life in London and the country. The theatres. The Poor.

Beginning of N. American Settlements (4 lessons).—John Smith in Virginia. Pilgrim Fathers in New England. Champlain, etc., in St. Lawrence Valley.

Beginning of Struggle between King and Parliament (2 lessons).—James I. and the new problem of government. Opposing views of the King's powers.

The Thirty Years' War (4 lessons).—Continuation of wars of religion. How all Europe was concerned in the struggle. Its results.

The Struggle of King and Parliament, 1629-1649 (7 lessons).—The ideas that inspired the rival parties—loyalty and liberty. A simple statement of the constitutional problem. The war.

Cromwell (5 lessons).—His part in the events from 1645 to 1653. The Puritan State—its aims and methods; its foreign policy.

The Restoration (2 lessons).—Why the Commonwealth did not last. The results of the constitutional struggle.

Books studied in class: Cavendish, "Wolsey" (Macmillan's Texts); Hakluyt, "Selected Voyages" (Vol. v., E.M.L.); Motley, "William of Orange" (Blackie's Texts).

In his second year each boy is encouraged to prepare in greater detail the life of one of the notable men of the period. He may lecture on the man's life, or prepare an essay to be read in class. For this piece of work he reads a Biography, or he gathers material from some standard volume of history. These "lives" are read at intervals in class, and after he has prepared his paper, a boy is expected always to be ready "to give his life." With good forms, it is possible to have all revision done by means of this narrating of lives in class.

III. THIRD YEAR (AGE 14-15). ENGLISH HISTORY, 1660-1815.

England at the Time of the Restoration (4 lessons).—The reign of Charles II. Settlements in America. Macaulay's Third Chapter.

The Age of Louis XIV. (6 lessons).—The power and magnificence of Louis. Versailles. The ambition of Louis. His religious and foreign policy. His wars. William of Orange.

The English Revolution (4 lessons).—The blunders

of James II. The new settlement of the constitutional problem. The wars and difficulties of William III.

The Age of Queen Anne (8 lessons).—The Spanish succession and the long war. Life in Queen Anne's England, illustrated from the writers of the time.

The Period of Walpole (4 lessons).—The growth of Cabinet government and the party system. Walpole's aims.

Frederick the Great and his Wars, 1746-1763 (6 lessons).—The growth of Prussia. Frederick's motives. War of Austrian succession. The diplomatic revolution. Seven Years' War. England's part in these wars.

The American Question to 1763 (10 lessons).—Growth of English and French settlements. Their natural lines of development and expansion. Growth of hostile feeling. The wars to 1763. Attitude of natives.

The Indian Question to 1800 (10 lessons).—The European settlements. The break-up of the Indian Empire. The political aspirations of the European settlers. Dupleix and his achievements. The work of Clive and Hastings. Expansion of British influence to 1800.

American Independence (6 lessons).—The Mercantile System. The Stamp Act. English and American opinions about it. The new customs taxes. The Declaration of Independence. European complications. The peace.

The French Revolution (10 lessons).—Its causes, ideals, and evolution from 1789 to 1795. The political, constitutional, and international problems involved.

The Wars of the French Revolution to 1802 (8 lessons).—The opposing forces. The army of revolutionary France and its leaders. Napoleon's early campaigns. England's share. The naval war—the blockades, St. Vincent, the Nile, Copenhagen. The truce of Amiens.

The Irish Question (4 lessons).—A survey of Irish problems up to the Act of Union.

The Napoleonic Wars, 1803-1815 (10 lessons).—England's share—the naval war and the Peninsular War. Some Napoleonic campaigns. Russia and the War of Liberation. The Hundred Days. The Vienna settlement.

Books studied in class: Macaulay, Third Chapter. Parts of Essays on Clive, Hastings, and Frederick the Great (E.M.L.); Addison, "Selected Essays"; Burke, Parts of American Speeches; Napier, "Battles of Peninsular War" (Blackie's Texts).

FOURTH YEAR (AGE 15-16). ENGLISH HISTORY, 1815-1915.

The Economic Revolution (10 lessons).—The inventions of the eighteenth century and their application to industry. The new towns and their inhabitants. New methods in agriculture and their effects. War and industrial conditions. Social discontent after 1815.

The Reform Act.—Inequalities of old constitution. Social misery as a stimulus to political reform. Growth of Reform party. Reform Act. Continental movements, 1830-1832.

The Work of the Reformed Parliament (4 lessons).—Poor Law Reform, Municipal Reform, Factory Acts, Liberation of Slaves. Each of these measures can be made into a useful lesson in "civics."

The New Agitations (6 lessons).—Failure of political reforms to relieve economic misery—hence new movements. Chartism, a demand for more political experiments. Anti-Corn Law League, a demand for experiments in political economy.

The Revolutions of 1848 (3 lessons).—Causes leading to unrest in France, Italy, and Germany. Results of the movements.

The Near East and the Crimean War (5 lessons).—The Turk and his misrule. Movements for reform. Greek Independence. Jealousies of England, Austria, and Russia in the Balkan question. Causes of Crimean War. Its results.

India and the Mutiny (5 lessons).—Growth of British power from 1800. Conquest of Punjab. First Afghan War. Introduction of Western civilisation into India. The Mutiny and its results. The East India Company.

The Uniting of Italy (5 lessons).—The difficulties. The work of Cavour, Garibaldi, and Victor Emanuel. Attitude of England and France. Napoleon's campaign. The Sicilian expedition.

The American War (5 lessons).—Growth of the United States from 1783. The constitution and the slave question. "Uncle Tom's Cabin." Abraham Lincoln. The war of secession. Its effect on England.

The Formation of the German Empire (5 lessons).—The movement for unity. The difficulties. The wars with Denmark, Austria, France. The policy of Bismarck. Alsace-Lorraine.

The Near East (3 lessons).—Unrest in the Balkan States. Bulgarian atrocities. The Russian campaign. England's attitude and the Berlin Conference. Results of this.

The European Alliances, 1878-1914 (2 lessons).—The formation of the Triple Alliance—what it did for each Allied Power. The revival of France. Alliance of Russia and France. England's attitude to the alliances. Isolation and entente policies.

South Africa (7 lessons).—The story of South Africa from 1815. Racial problems. The Great Trek. The Boer Republics. Diamonds and gold. The work of Rhodes. The struggle of Briton and Boer. The Union of South Africa.

Egypt and the Sudan (4 lessons).—European interest in Egypt. Suez Canal. The English occupation of Egypt. Gordon and the Sudan. The re-making of Egypt by Lord Cromer. The re-conquest of the Sudan by Lord Kitchener.

The Far East (5 lessons).—Early wars with China. The awakening of Japan. Wars of China and Japan. European interests in China. Port Arthur and Kiaochow. Boxers and the International expedition. War of Japan and Russia. The Chinese revolution and the government of Yuan-Shih-Kai.

The Near East and the Great War (4 lessons).—The Balkan League and its victories. The break-up of the League. Russian and Austrian rivalries in the Peninsula. The murder of the Archduke. The War.

Some Current Questions in English Politics (4 lessons).—Free Trade, Ireland, the Suffrage, Social Reform, etc. These can be treated from the historian's, and not the partisan's, point of view.

Some Simple Description of the Government of the Empire (6 lessons).—Elections. Local and Central Governments. The Cabinet. Courts of Law. Colonies and how they govern themselves. India and Egypt and how they are governed.

A. J. B. GREEN.

Perse School, Cambridge.

The Results of Rational and Conventional Spelling Compared.

THE following account of an experiment in starting with a rational spelling before teaching the conventional will be of particular interest to the teachers of young children. A comparison of what can be

achieved when the language taught has a good spelling, like the Italian, with the results obtained in our English schools, has been forced upon us of late; we ask ourselves why the English child does not "explode into reading and writing" like the Italian child of whom Dr. Montessori tells us. Any efforts directed to reducing the waste of time, especially in our elementary schools, entailed by the teaching of spelling, deserve the most earnest consideration.

This experiment shows that, when children start by using a rational spelling, they acquire in *fourteen months* the power to read and spell in the conventional way as fluently and correctly as others who have been occupied for nineteen months with the conventional spelling only; and what is more, their speech is distinctly better. There is nothing surprising in this to those who appreciate the value of phonetics; but it is good to have a practical demonstration, and we owe a debt to those who undertook the work.

The report given below is the work of a Scottish student of method.

"A short time ago, along with a member of the Committee of the Simplified Spelling Society, it was the good fortune of the writer to visit a school 'somewhere in Scotland,' and to see, or to be exact, to hear the results of an interesting experiment that had been made in the Infant Department of the school.

"The subjects of the experiment had been caught young—as soon, in fact, as they went to school. They were about a dozen in number. For the first few months of their school life they had been taught as a separate class in reading. Their text-book was not the ordinary text-book set up in the ordinary spelling, but a special book called 'Nursery Rime & Simple Poems.' This had been supplemented by suitable extracts from the books in use in the school printed on the blackboard in simplified spelling.

"This special class was taught by the infant mistress herself at the same periods as the other children of a similar age who were taught the conventional spelling in the usual way.

"These pupils had not been specially selected. They had been taken at random from a group of incoming children at the beginning of their school year.

"As far as possible the simplified spelling section of the class got lessons of the same duration as the 'Nomic' section. But an unusual amount of sickness amongst both teachers and pupils interfered somewhat with this arrangement. In spite of some little interruption the 'Furst Reeder' was overtaken in ten months. Thereafter the simplified spelling section was put to the ordinary senior infant work, taking their places along with children who had been a little longer at school.

"The headmistress reports that when they joined the others the simplified spelling pupils were very apt at reading and spelling passages containing fairly ambitious words, so long as these were printed in simplified spelling. So far as the pupils' experience went, each sound was represented by a symbol or group of symbols. There were no exceptions, and there was nothing to cause hesitancy. They knew nothing of the irregularities of the common spelling.

"The non-simplified spelling section, on the other hand, had become accustomed to the idea of exceptional and 'look-and-say' words, and also to the fact that one sound may be represented by more than one symbol, while conversely one symbol or group of symbols may represent several sounds. This section was familiar with irregularities.

"It was found that the thorough training that the simplified spelling pupils had received through their use of a consistent spelling made them particularly alert in observing the relations of sounds and sym-

bols, and they passed through the 'transition' stage more easily than had been expected.

"At the date of our visit these simplified spelling pupils had been fourteen months at school. They were brought before us as a section. Books in the ordinary spelling were put in their hands, and each child read a passage, after which he (or she) was given certain words to spell—no child was omitted either in reading or in spelling.

"Next about the same number of children of the other (non-simplified spelling) section who had been nineteen months at school were brought in. They read the same passages from the same reading-book and were also given words to spell.

"On the whole the reading of the two sections as regards the mere naming of words was very similar. Words of irregular spelling that gave the first section trouble gave trouble to the second section also.

"The spelling test did not reveal any difference in the matter of attainment. There was, however, a noticeable difference as the result of the speech-training which the pupils of the simplified spelling section had received. They had a freer, clearer, easier pronunciation, and a more distinct, clear-cut articulation, than those of the nomic section.

"To sum up: the simplified spelling pupils (taken, it may be repeated, at random from a group of new pupils) after ten months' instruction in simplified spelling and four months in ordinary spelling, read as well and spelt as well as the non-simplified spelling pupils who had had nineteen months' instruction in the usual methods.

"The balance was altogether on the side of the children who had been taught on the new lines. They had had a better training in the relations of sound and symbol, they had acquired a better and a more natural utterance and expression, and had laid a more solid foundation for the subsequent cultivation of a polite form of speech. That, too, under conditions which the headmaster and the headmistress responsible for the experiment did not consider altogether favourable."

The work of nineteen months done in fourteen! And yet teachers continue to ask: "What of the transition stage? And what of the spelling?"

The answer may be found in the results of this experiment.

WALTER RIPPMAUN.

Long Multiplication.

I HAVE just rediscovered the following method, which is doubtless, however, well known. It does not seem to be much used, as I have never seen it described. Perhaps some readers of THE SCHOOL WORLD will indicate references to its use in text-books or schools.

Multiply 289 by 357 (beginning, for example, with the highest figure).

$$\begin{array}{r} 289 \\ 357 \\ \hline 867 \\ 10115 \\ 103173 \end{array}$$

In the second and third line the figures of the preceding line are added in so that the last line represents the product. There is no final addition. Thus, starting the second line, we say 5 times 9 are 45, 5 times 8 are 40 and 4 are 44 and 7 are 51, 5 times 2 are 10 and 5 are 15 and 6 are 21, 2 and 8 are 10.

The method commonly taught is the clumsiest possible, since it involves both carrying and a final addi-

tion. In this method there is no final addition. Another excellent method is the Hindoo method, which is admirably adapted to use with squared paper and which involves a final addition and no carrying.

G. H. BRYAN.

Incorrect Solutions to Arithmetical Problems.

INCORRECT are sometimes more interesting than correct solutions to problems.

The interest of the following solutions (if, indeed, they have any) consists in the fact that both give the correct answer.

Problem.

If 3 more eggs in a shilling's worth lowers the price 4d. per dozen, what is the cost of a dozen eggs?

Solution 1.

3 eggs more for 1s. make a difference of 4d.,
∴ each egg makes a difference of $1\frac{1}{3}$ d.

∴ 12 eggs cost $1\frac{1}{3} \times 12$ d. per dozen = 1s. 4d. per dozen.

Solution 2.

Let x d = cost per dozen.

∴ a shilling's worth is $144/x$ eggs.

∴ $144/x + 3 = x - 4$.

This gives $(x+9)(x-16) = 0$.

∴ $x = 16$; cost = 1s. 4d. per dozen.

Both the above solutions reached me in a recent examination.

C. O. TUCKEY.

Charterhouse, Godalming.

"Inductive Studies in English History."

I READ your very sympathetic review of "England Before the Normans," the first volume of this new series, with much gratitude, but I think it is only right that I should state that, while my collaborator and I both appreciate the work of Mr. Keatinge very highly, we did not receive our inspiration from him. This series was in contemplation before any of Mr. Keatinge's books appeared, and its inspiration was drawn from the admirable books by Mrs. Mary Sheldon Barnes on "General History" and "American History," published by Messrs. A. C. Heath and Co., of Boston, some time in the 'eighties of last century. As the work of this lady seems to be very inadequately known "on this side," I gladly record my own debt to her in this matter.

F. G. SNOWBALL.

The School World.

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SIXPENCE.

SKETCH MAPS IN GEOGRAPHY.

By E. R. WETHEY, M.A., F.R.G.S.
Bradford Grammar School.

THE last report of the Cambridge Local Examiners in Geography again directs attention to the need for more frequent drawing of *sketch-maps* to illustrate particular points in answers to questions in geography. The examiners also say that the teaching and practice of map-drawing have been much neglected.

It is questionable how far the last statement is correct. Map-drawing could hardly ever have been more in vogue than it is nowadays, if one may judge from the notebooks of a very large number of geography students. But the examiners do not see these. Moreover, they forget that *map* drawing takes a long time even with the atlas in front of one, and is, therefore, not in favour with candidates who not only have no atlas in front of them, but also very little time to do their paper without adventitious work which may, or may not, fetch any extra marks. But there is no gain-saying the first complaint. Theirs is no unique experience. It is universal, as anyone knows who has regularly conducted geography examinations on behalf of various public bodies.

And yet every geography teacher agrees that this should not be, that sketch-maps should be made use of, that examination answers as well as notebooks should be illustrated with sketch-maps. Why then are all examining bodies still reiterating the same old complaint? It is, we think, the fault of the teachers themselves. They make their sketch-maps too elaborate, and in consequence, practically as difficult to reproduce in the time allowed as an ordinary map itself.

For what is a "sketch-map"? A "sketch," according to the dictionaries, is a rough drawing giving outlines without details, and a map is a representation to scale of the earth's

surface, or part of it, detailed on a flat surface of paper or other suitable material. The special object of a sketch is to serve as the basis of a more finished picture. A "sketch-map" is, therefore, a rough map with a special object, and may comprise anything in the way of map illustration from the diagram-maps of Figs. 1 and 2 to the comparatively finished articles of Figs. 3 and 5. Its special object is not so much to serve as a basis for completing another map as to illustrate, or emphasise, a special feature which might be lost, or smothered, in the complicated details of a full-blown map. In other words, every sketch-map must have its object, and the simpler the object the better the sketch-map. Fig. 1 has one main object—to teach small boys the highland system of eastern France. Incidental objects, which appear to the young draughtsman not so much as objects as—if he is rightly led—his own deductions, are the easiest ways into the heart of France from the east and the dependence of the canal-engineer on the lie of the land. The "map" is simple enough, and therefore easy of reproduction. One thing is certain; it is spoilt as a sketch-map if more details are included. By many it might be called a diagram; it is unseemly to quarrel over names; any examiner, however, would have his traditionally stony heart drawn to the student who produced it as a sketch-map in illustration of his (probably) bald description of eastern France and its highlands.

Sketch-maps of this type—more or less—we think, should be the only types of maps for pupils' notebooks. Naturally as the boys and girls grow older, more elaborate maps may be introduced, but Heaven forbid any attempts to reintroduce the map-drawing of twenty to thirty years ago! And yet we have seen displayed on school walls—even now in 1915—intricate maps, mere copies from the school atlas, as samples of meritorious work. "Meritorious"

some of them are, certainly; but not as geography. They bring tears, partly of mirth,

in C. Divide AC into ten equal parts. . . . Through C draw CD, parallel to the sides of the paper, and

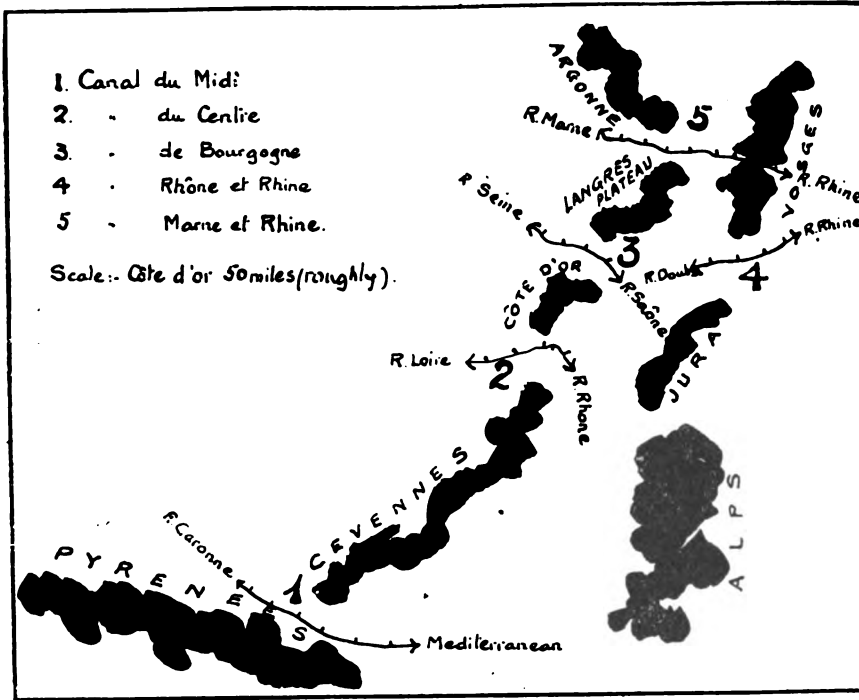


FIG. 1.—Highlands of eastern France.

partly of sorrow, to our eyes as they remind us of our earliest attempts years ago, on say, "England and Wales"—each county coloured, mountains neatly hering-boned and crossed by the rivers, names all round the coast where there was plenty of room, and towns to fill whatever blanks were left by the county names—the whole (the work, by the way, of nearly all the term) hung up in a conspicuous place *pour encourager les autres*—poor "autres"! Such a map is obviously futile as geography, and a great waste of valuable time into the bargain. Indeed, all elaborate maps are out of place as school exercises—except to kill time, and in a well-disciplined school there is little call for this operation.

Of a piece with them, and still existing also, are memory maps and their schemes. How to draw a correct map of England and Wales is, in one well-known textbook, shown as follows:—

Draw a line AB at an angle of 15° to the bottom edge of the paper, and divide it into two equal parts

discular to CO; its middle point T is London. . . . and so on, until the writer has used up all the letters of the alphabet, when he naively adds:

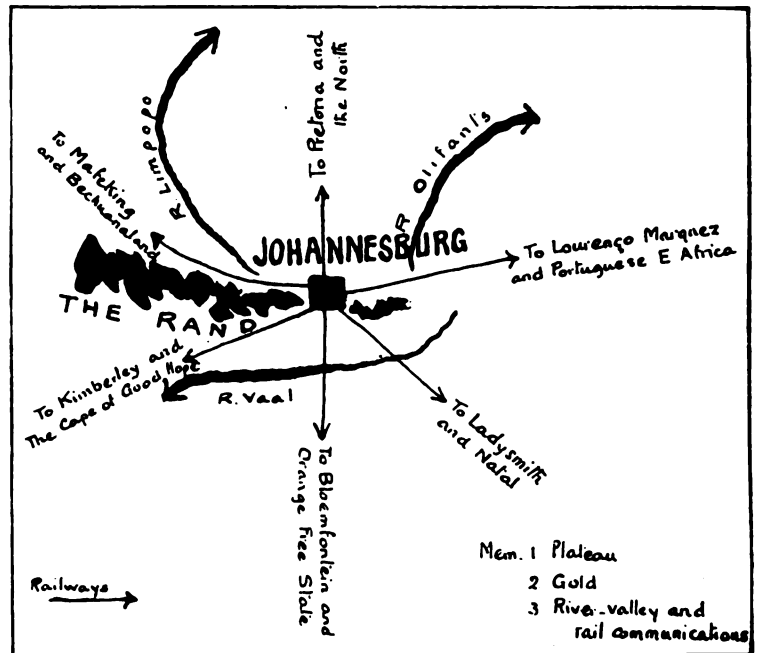


FIG. 2.—Commercial advantages of the site of Johannesburg.

"Now our framework is sufficiently correct to enable us to draw a very good map." The

teacher of such a method gives you two things to remember: (1) the scheme, (2) the map. It would seem preferable to eliminate (1) and proceed to (2) without further delay.

Because a sketch-map looks simple and easy, it does not follow that there is not good sound work behind it. To draw one successfully connotes solid knowledge and reasoning power. It is as one of Phil May's inimitable sketches where a line or two expresses everything; but the line or two are the result of that genius which has been able to take pains. Clearness is as essential as it is striking. Nothing has been produced in illustration of the present campaigns in the east and west more effective than Hilaire Belloc's sketch-maps in *Land and Water*. They would satisfy even the Cambridge Local Examiners. To see if we could obtain new raw material for this article the following question was set to a Form of boys accustomed to draw sketch-

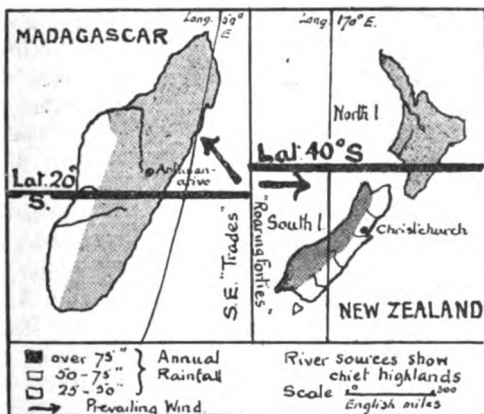


FIG. 3.—A contrast in rain distribution.

maps at a moment's notice:—"Draw a sketch-map with the idea of showing the commercial advantages of Johannesburg's site." Fig. 2 was one of the results. As a map it is, of course, inaccurate—we leave it to our readers to test; as a sketch-map it speaks loudly on the three main points which the boy wished to emphasise and which he thoughtfully entered in a corner of his work. And it was done inside of ten minutes.

Again, Fig. 3 may be taken as a sample answer to a question we take at random from Lyde's "World" (No. 82, p. 394):—"Express the following in the form of a map:—There is a curious contrast between the distribution of rain in Madagascar and in New Zealand. Why should there be this contrast?" The rain distribution is easy enough: it only means examining the school atlas, and all sketch-maps for children of any age should lie within the compass of the school atlas (almost certainly the only atlas they have). That settled

and indicated on the two islands, it remains to tackle the "Why?" Boys who have been trained to think in their geography lessons by means of constant question and answer, at once associate rain with sea, highlands and wind, and, as the first two are features on the map plainly common to both Madagascar and New Zealand, are at once driven to the conclusion that it is the winds which are the determining cause of the "contrast." Hence the thickening (for emphasis) of the two lines of latitude. The resulting map is simple enough, but to evolve it, reasoning powers have been called into play and education (in geography) is justified of her children.

To get boys into the way of drawing sketch-maps so that—to take one result—they will use

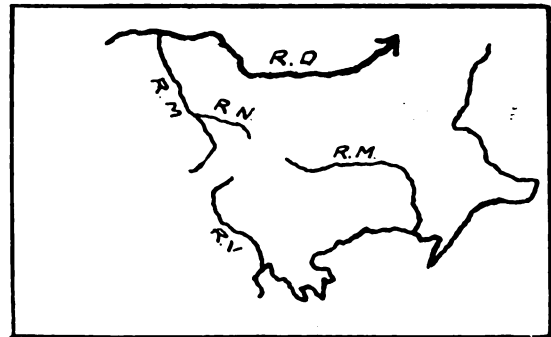


FIG. 4.—The "lead" for Fig. 5.

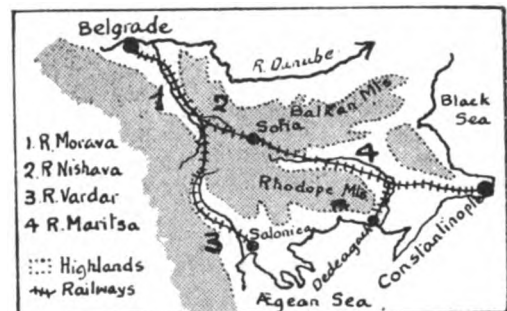


FIG. 5.—The Diagonal Furrow of the Balkan Peninsula. Distance from Belgrade to Salonica direct, 300 miles.

them for examination papers as naturally as they will use their pens is really not difficult. But each and every opportunity must be seized, and there is not a single geography lesson which will not provide several opportunities. A few sketches on the blackboard provide the skeleton. The boy clothes it, keeping always a special object in view. Fig. 4 is the master's lead; Fig. 5 is the result, worked out by the boy. He has ground to work upon right at the beginning and he feels he can go on. Set the subject without such preliminaries, e.g., "Draw a map to show the Diagonal Furrow of the Balkan Peninsula," and you will dishearten the bottom twenty of the Form.

Their efforts will probably wait upon the spade work put in by the top five or six. But give them something to think about and work upon as a start and even the youngest will take an interest in his exercise, and some of them will turn out the finished article surprisingly well.

En passant it is, we think, advisable in all sketch-maps to encourage shading for mountains and not straight lining. Fig. 6 gives the types of mountain portraiture in vogue in a good many schools at the present time. No. 5, which may be done either with brush or blotting-paper stump, is to be preferred, though No. 4 bespeaks observance on the part of the drawer. He recognised that "chain" is a poor word for a series of plateaux such as the Pennines present. No. 3 is the oldest and worst; it takes some time to do, and seldom looks well; it is still sadly too common.

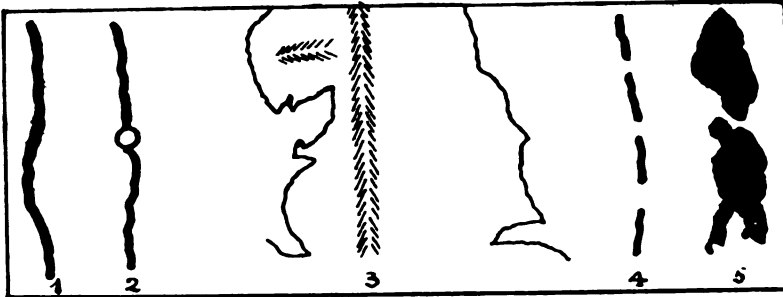


FIG. 6.—The schoolboy's "Pennines."

As for notebooks—sketch-maps are their very life. Such notes as—

Seine, France.—Most important river—navigable to Troyes—immense area of tributaries, especially Marne and Yonne—connective and dependent canals.

Leeds, R. Aire.—Pennine sheep grazing and water power—mouth of Airedale—north edge of Yorkshire coalfield: ∴ manufactures (wool, leather, steel).

West communications <i>viâ</i> Calder and Colne → S. Lancashire	} ∴ Commerce and trade
West communications <i>viâ</i> Aire Gap → mid Lancashire	
North, south, and east communications over York plain and lowlands of S.E.	

are all very well. They may, and they may not, imply good teaching. Lead the boys to illustrate them with a couple of *simple* sketch-maps, and there is at once something tangible, something to prove that the teaching is good. And when they reproduce them—as assuredly they will—what time the Cambridge, or any other, examiners come round, they will, off their own bat, as it were, demonstrate the intrinsic value of sketch-map drawing. And this value is twofold: it encourages memory, which is obvious, and it compels reasoning, which is education.

EDUCATION AT THE BRITISH ASSOCIATION.

THE Manchester meeting of the section will always be notable if for no other reason than the fact that the president for the year was a woman. It would scarcely have been possible to have selected a more acceptable person than Mrs. Sidgwick, and her presidential address was one of the sanest pronouncements yet made to the section by its presidents. With characteristic modesty, she disclaimed any title to speak on the subject except as a member of the general public, one of whom she thought might advantageously as such, from time to time, be placed in the chair, for their concern in the subject is not merely financial and administrative. It is more intimate than that. Education is not a subject like physics and chemistry, on which only an expert has a right to an independent view. "In its widest sense, education concerns everybody, and almost everybody is bound to have views about it." Indeed, there is no lack of discussion outside the expert ranks, but, unfortunately, a confusion between education and book-learning often lies at the back of current controversy. Are we

really going to regenerate mankind by keeping children a year longer at school? Is it really educationally good for the country boy to refuse in any circumstances to allow him "to do his bit" in the fields at the present juncture? Does education begin and end with school? Can we get the best results under any compulsory system? Is it not rather our duty to offer the fullest possible educational opportunity for everybody—that is to say, to furnish the means of satisfying intellectual curiosity, every spark of which should be fostered? It sometimes happens that this spark cannot be fanned into flame through book-learning alone. It may be there, and yet fail to respond to imposed lessons, "while it would blaze up if the pupil could by any means be induced to desire to learn before he is taught." But the address, which appears elsewhere in this issue, should be read in full. Lord Bryce, who moved a vote of thanks to Mrs. Sidgwick, expressed his concurrence with every word.

It may be fairly said that the honours of the meeting this year fell to the women, for after Mrs. Sidgwick's pronouncement, the most remarkable papers were undoubtedly those concerning the education of girls in relation to their business careers. Mrs. W. L.

Courtney, Miss Haldane, and Miss Charlesworth dealt with the problem from the outside—from the points of view of employer, social reformer, and employee respectively. Miss Oldham represented the headmistresses. There was general agreement that the "business crammer" ought not to exist, and that the State itself was the chief sinner in maintaining him by encouraging girls to enter competitive examinations before the age of sixteen. School-trained girls, however, are not wanted by business firms. School at best is rather amateur. If the school atmosphere is right it differs totally from that of business. The plunge from the shelter of school to the rush and turmoil of business is dangerous. An interlude is desirable—six months or a year in a business school in which the curriculum is not narrowed down to "cramming" limits is wanted. Girls should, however, be kept at school proper till they are eighteen, if intended for business. An educated girl does her work in an entirely different spirit from an uneducated. Business should also offer wider prospects to girls. The narrowed specialisation needed to obtain a post in a Government Department, together with the complete want of prospects, has a most depressing influence upon girls, who are apt at the outset to mistake a permanent situation for a career. An admirable discussion followed, in which Miss Escott, Miss Burstall, Mrs. Higgs, and others took part. Mrs. Higgs spoke upon the problem of selection, suggesting that this should be made at two periods in the school life of the girls. At eleven the division should be between those fitted for manual occupations and those for clerical work. At fourteen, again, a division between the girls who were destined for professions and those who would enter manual-clerical posts. She drew attention to the great field for women's labour in social service posts—workhouses, asylums, prisons, and the like, where special training and a good general education are especially desirable.

Perhaps second in interest, though last in point of time, was the session given up to the consideration of education and industry. Sir Wm. Mather opened the discussion with a general survey of progress and tendencies. He lamented the loss of energy entailed in quarrels about religious teaching when all attention should be given to making the pupils into children of light. The waste of elementary education through the absence of continued schooling, the futility of any economy which might come from the reduction of grants to any grade of education, the importance of maintaining the quality of the teaching profession, and the promising work of the Boy Scouts all came up for notice. Sir William's

suggested "National Commissioners of Education," who should be independent of party, sounds attractive, but in practice it could scarcely mean more than a difference in name. The elevation of local authorities to positions of greater independence might be accomplished by reducing the functions of the present Board of Education. The responsibility of Commissioners to Parliament would continue in any case. Principal Garnett and Mr. James Graham took up the subject after Sir William Mather. The former pleaded in the first instance for more exact thinking in education. We need a technical language in which words might have a precise meaning, if truth is ever to be reached. He poured contempt upon the "broad foundation" idea. "Coherence at seventeen is the surest way to comprehensiveness at twenty-seven." Education should aim at skill in thinking and a single wide interest. By means of a diagram Principal Garnett showed what in his view should be the relationship of the various grades of education. Mr. Graham described the ideal behind the trade schools for boys from twelve to fifteen which had been established in Leeds, and the success of which had led the committee to draw up a scheme for making such a course the natural ending for all the primary schools of the city. Although called "Day Preparatory Trade Schools," no actual trade is taught, but one-third of the school time is given to simple workshop practice, the other two-thirds being divided between drawing and English. Messrs. Fleming and Pearce described the educational work done for their apprentices by the Westinghouse Company—an example which Mr. Cramp feared could only be followed by very large firms. He would, however, cut down the cost of trade apparatus in technical schools and give capita-tion grants to firms who undertook the instruction of their young employees in a satisfactory way.

What was said in the discussion on military training in schools did not actually prove very helpful. Mr. Paton said he thought the subject untimely, as it could not be discussed in a calm spirit at such a time. His own contribution to the subject was certainly impassioned, and at times suggested *ad captandum* pleading more fitted to a politician seeking votes than to a distinguished schoolmaster. Some confusion arose through the impression that in some at least of the public schools military training was compulsory. The headmaster of Rugby and Mr. Barton of Winchester corrected this mistake. Dr. David and Mr. Somerville, who read papers on the subject, advocated military training not only on broad national grounds, but

also on the ground that it appealed to most boys and was an admirable field for the exercise of their intelligence. Mr. Wood read a useful paper dealing with the facts of the case in the self-governing Dominions and in western European countries.

Almost less of profit came from the discussion of aims and methods in the teaching of history in schools. The academic as opposed to the school element was too prominent. Historical specialists are, like all other specialists, apt to forget the limitations imposed upon the schoolmaster by the requirements of examinations and by the immaturity of the pupils. Mr. Morris, of Bedford, gave forcible expression to this view, following as he did Prof. Hearnshaw and Prof. Ramsay Muir. Prof. Tout, who opened the discussion, expressed grave dissent from what he conceived to be the doctrines of his colleagues. He took a healthier view of democracy than Prof. Hearnshaw. Its weaknesses were slight in comparison with those of the past. Nothing so bad had happened in this war as the Mutiny of the Nore, and the modern corruption of the voter by specious promises bore no comparison with the malpractices of Whigs and Tories in the eighteenth century. He agreed with Prof. Ramsay Muir's desire to see the geographical factor more insisted upon in school history, but the programme of history sketched by the latter was lamentable in so far as it left out of account all that made modern England what it is, and left unexplained the ancient village church, the castle, the Roman camp, and other historic monuments with which our country is crowded. Mr. J. A. White gave an interesting sketch of historical work done in a London elementary school—an outline which won Prof. Tout's warm approval.

This discussion was followed by a paper on the "Teaching of Ethics and Politics," by the mistress of Girton. Prof. Conway brought the day's work to a close by an eloquent reminder of what the world owed to the Greeks and what we owed to classical education in this country. As a protest against growing materialism in education, his paper was thoroughly timely. Unfortunately, there was no time for discussion, or it might have been urged that Prof. Conway had overstated the case for classics.

Some Geographical Factors in the Great War. By T. Herdman. Pp. 71. Maps. (Brown.) 9d. net.—Mr. Herdman's topics are the great land-gates, the seas, the commercial war, and the problems of nationality, and within the restricted limits of his space he has provided a useful introduction to the ideas underlying the title of his book. Teachers will find this little book useful and stimulating.

THE MILITARY TRAINING OF YOUTH IN SCHOOLS.¹

A REVIEW OF SYSTEMS OF TRAINING IN THE BRITISH EMPIRE AND IN VARIOUS FOREIGN COUNTRIES.

By A. B. Wood, M.Sc.(Vict.).

I.

SINCE the time of the Boer War, and especially during the last twelve months, numerous articles have been published supporting or opposing the principle of compulsory military training in our schools. In some of these articles the question has been considered from the point of view of the stages of growth and development of the average boy between the ages of twelve and twenty, whilst others contain a discussion of the question from a military point of view only. Very few, however, give any definite information on which a scientific discussion can be based. In discussing a question of this character, it is advisable, if not essential, to obtain a certain knowledge of what is actually taking place in other countries where the system of compulsory military education is practised, and from observations of their methods and results to begin to formulate our ideas as to the most suitable system to be recommended for adoption in Great Britain.

The object of these articles is to attempt to supply some of this information; consequently a discussion of the various merits or demerits of the "voluntary" or "compulsory" systems has been avoided purposely.

The greater part of my information has been supplied by the High Commissioners and Directors of Education of the respective countries considered. I should, at this point, like to express my appreciation of their kind assistance. My thanks are also due to Mr. Twentymen, of the Board of Education, who has rendered valuable assistance in collecting information. In addition to this, numerous official government publications of the various countries have been consulted.

For the sake of clearness we shall examine the systems of training, I., in countries of the British Empire; II., in other countries—European.

I. *In the British Dominions—Australia.*—In Australia all male inhabitants (except those specially exempted) are liable to military service in time of peace as well as in time of war. This principle of compulsory military training was made law in 1909, and came into operation in January, 1911. Those responsible for the administration of the Act were anxious to observe how such an innovation—the first of

¹ Paper read before the Section of Educational Science of the British Association at Manchester on September 9th, 1915.

its kind in the British Empire—would operate. Not even the most sanguine of them expected that it would continue without subsequent adjustment, but even the most pessimistic critics have been constrained to admit that the Act has worked with remarkable smoothness; only a few amendments, of a purely technical character, have been introduced.

The training prescribed is as follows:—

(a) From twelve to fourteen years of age in the Junior Cadets.

(b) From fourteen to eighteen years of age in the Senior Cadets.

(c) From eighteen to twenty-six years of age in the Citizen Forces (Militia).

The Act requires a *Junior Cadet* to devote ninety hours per year to the work, including (i) physical training, not less than fifteen minutes per day; (ii) marching drill; and any two of the following: (iii) miniature rifle shooting, (iv) swimming, (v) running exercises and organised games, (vi) first aid. The training of Junior Cadets is in the hands of the masters of the schools wherein the training is in accordance with the regulations. The object of the Junior Cadet training is not to make juvenile soldiers, or to create a military spirit, but to secure healthy bodily development. Although the Commonwealth does not give attention to girls, they receive practically the same training as the boys, with excellent results. A very limited amount of military drill is practised, but for little more than school purposes. No uniform is worn.

On attaining the age of fourteen years, the boy, if medically fit, becomes a *Senior Cadet*. He now wears a uniform, carries a rifle, and becomes subject to military discipline. Here he continues physical training and also becomes acquainted with military or naval work. He practises shooting at fixed and moving targets. The Act requires him to attend annually at least four whole-day drills (four hours minimum), twelve half-day drills (two hours minimum), and twenty-four night drills (one hour minimum). Every high school (public, private, or foundation school) has its quota of cadets, two, or even three companies. These companies are officered usually by teachers, who are required to attend camps of instruction at certain intervals. The greater number of cadets, however, leave school between thirteen and fourteen. These are drafted into companies, and attend courses of regular training. The number of Senior Cadets annually in training is about 100,000 (including about 3,000 Naval Senior Cadets). Competitions covering the whole range of Senior Cadet training are held frequently, and annual camps are considered a great success.

On reaching his eighteenth year the cadet,

if medically fit, is transferred to the *Militia*, where he serves for eight years, attending in that period drills equivalent to sixteen whole days. It is obvious that in a country so extensive as Australia many of the people live in thinly settled districts where the expense involved would be far out of proportion to the result achieved. These districts are exempted from the Act.

The following extracts from a letter to me from the Director of Education, Adelaide, South Australia, are interesting: "*Effects and results of the System*: (1) *On the School*: Discipline is strengthened, and becomes a matter of course. The boy learns self-reliance and obedience to properly constituted authority outside school as well as within. The corporate sense is strengthened. (2) *On the Boy*: His body is well developed. He takes pride in himself and in his community and learns to carry himself well. (3) *On the Home*: The boy has learnt discipline and becomes a better home boy. Juvenile vice (loitering, cigarette-smoking, etc.) is diminished.

"Militarism does not exist in Australia. . . . The Universal Service is purely for defensive purposes. . . . We have nothing to fight for except our own freedom and safety and that of the Empire. . . . We believe, too, that it is the duty of the State to care for the physique of its people. . . . Universal Service has only been in force for four years, but we already have indications that its effect on the nation will be highly beneficial, both from the moral and from the physical aspect." This expression of opinion by the Director of Education for South Australia is amply borne out by the 1914 reports of the Premiers of the various States as to the effect of the new system. Recent events give us admirable testimony to the quality of soldier and man produced by the Australian system of military training.

New Zealand.—In New Zealand the system is somewhat similar to that just described. The Education Acts of 1908 and 1914 made physical drill a compulsory subject in elementary schools; the instruction was made subject to inspection and annual reports issued. This drill was essentially of a very simple non-military character.

The Defence Act of 1910-11 provided for the gradual military training of every male New Zealander from the age of fourteen years to the age of twenty-five years, after which he serves in the Reserves up to the age of thirty. Those who, on religious grounds, have a conscientious objection to bearing arms are to be trained, as far as possible, in the non-combatant branches, such as ambulance work. On reaching the age of fourteen, or on leaving the primary school, the boy is transferred to

the Senior Cadets, when he becomes a member of the military forces, though not liable to be called out to fight. He remains a Senior Cadet until eighteen, when, if medically fit, he is drafted into the Territorial Force. At twenty-five he is transferred to the Reserve. The training of Senior Cadets is similar to that given in Australia, consisting of a system of military drills, rifle practice, etc. The strength of the Territorial Force in 1909-10, previous to the introduction of the Act, was approximately 14,000, whereas in 1913-14, after the Act, this number was increased to 26,000—almost doubling the strength of the army.

Referring to the cadets, the General Officer Commanding the Defence Forces of N.Z. mentions the following in his report for the year 1913-14:—"The experiment has been tried of handing over certain secondary schools entirely to military authority for a period of four days for a continuous course of military training. The success of this experiment is a favourable augury for the initiation of the system of concentration of country companies." After referring to the improvement in discipline and the healthy spirit of emulation existing between companies of cadets, he mentions that employers and others remark upon the improvement in behaviour, physique, and appearance of cadets in their civil capacity. In 1914 there were 25,300 cadets in training in the Dominion. The reports on secondary education for 1913 and 1914 contain numerous references by headmasters to the increased physical and mental efficiency brought about by this training.

Canada.—The following information has been obtained from the Official Government "Regulations for the Cadet Services of Canada, 1913," and subsequent amendments: Cadet corps are organised in companies of twenty to fifty each. The corps are classified as follows: (1) Those consisting of pupils in attendance at colleges and schools controlled by Provincial Government. (2) Those composed of pupils in attendance at colleges and schools not under Government control; and (3) those composed of boys who, with the permission of their parents, prefer to join corps unconnected with educational establishments. The age-limits for cadets are twelve to eighteen years. Where a cadet corps is affiliated with an educational institution, a *bonâ-fide* student, who exceeds the regulation age, may join the corps or continue to be a member, provided there is no Militia unit, affiliated with the institution, which he might join. Instruction is given, as far as possible, by the ordinary school teachers, who must be duly qualified by attendance at a military

school of instruction and holding a cadet instructor's certificate or its equivalent. The syllabus of instruction includes general physical training and military drill, semaphore signalling and the use of arms (rifles and sub-target guns being supplied by the Government).

No statistics or reports appear to be available.

South Africa.—Subject to the provisions of the Defence Act of South Africa, July, 1912, every citizen is liable between his seventeenth and sixtieth year to render in time of war personal service in defence of the Union. In preparation for this every citizen is liable to undergo a prescribed course of military training. In urban or other populous areas, where facilities for the proper training of cadets can conveniently be arranged, all boys between their thirteenth and seventeenth years (inclusive) may be required to undergo a course of cadet-training annually, unless their parents raise satisfactory objection. Employers are compelled to give all proper facilities for enabling employees to carry out any service or training in the Defence Forces for which he is eligible.

Instruction is given in military drill, physical exercises, rifle shooting, signalling, etc. Schoolmasters, and others who are members of the Coast Garrison or Active Citizen Forces and hold commissioned rank, may be appointed officers of cadet corps. All arms, ammunition and equipment prescribed for cadet-training are issued at the public expense. Uniform is not provided by the State, but annual grants for this purpose are made under certain conditions. No exemptions from cadet-training are granted except in cases where boys are medically unfit.

The Act provides for compulsory cadet-training *only where it can be carried out efficiently*. Thus, in rural districts with scattered farm schools, boys between the ages of thirteen and seventeen may be enrolled, with the approval of the District Staff Officer, as cadet members of Defence Rifle Associations if arrangements cannot conveniently be made for the ordinary system of cadet-training. Proof of satisfactory cadet-training absolves a citizen from a certain amount of recruit-training.

To stimulate friendly rivalry between the cadet corps, competitions are arranged and trophies are contested for annually. The Commandant of Cadets, in his report for the year June, 1912, to June, 1913, states that the percentage efficiency for the whole Union is 87.5 in a total of 11,318 cadets—an extremely satisfactory result.

(To be continued.)

SCHOOL-BOOKS AND EYESIGHT.¹

SINCE presenting its report at Birmingham in 1913 the committee has had correspondence with education authorities, school medical officers, teachers, publishers, and authors, and is pleased to report that widespread efforts are being made to secure the fulfilment of the committee's recommendations, at least so far as books for young children are concerned. The committee hopes that further progress will be made in regard to books for boys and girls over fourteen years of age. A diminution in the power of accommodation of the eye continues during this period of life as part of the changes of adolescence. At the same age there is good educational reason for an increased extent of reading and for the use of books containing a considerable amount of information. Hence visual defects frequently become evident at about the age of sixteen. The recommendations in the committee's typographical table issued in 1913 were based on a balanced consideration of the above facts, and it is important that the standard proposed for readers over twelve years should be insisted upon.

Investigations have been made during the last two years in order to obtain an objective measurement of the gloss of paper, and the committee is indebted to Mr. A. P. Trotter for designing a new form of gloss-tester, and for carrying out tests with books and writing-papers used in schools.

The committee observes :—

(1) That glossiness of paper depends mainly on specular reflection, *i.e.*, reflection as from polished metals; such reflection is apt to interfere with binocular vision. The ideal surface for books would exhibit no specular reflection; all the reflected light would be scattered or diffuse reflection, equal in all directions and independent of the direction of the incident beam. Such absence of gloss is realisable in any fine white powder, such as magnesia, but not in printing papers. No harm to eyesight is, however, likely to accrue if the specular reflection is not excessive; hence the proportion of specular to diffuse reflection affords a suitable index of the glossiness of paper.

(2) That a large proportion of school-books and writing-papers are satisfactorily free from glare at angles of incidence not exceeding 45 degrees. In most of these satisfactory books the specular reflection does not exceed the

diffuse reflection when the light is incident at 45 degrees, the paper being viewed from the direction of the corresponding specularly reflected rays.

(3) That when the specular reflection exceeds 56 per cent. (the diffuse reflection being then less than 44 per cent.), there is likely to be injurious glare. The risk is greater if the book is read in artificial light.

The committee therefore hopes that publishers will select for school-books papers from which the specular reflection at 45 degrees does not exceed the diffuse reflection. Books in which the specular reflection exceeds 56 per cent. of the total reflection (specular *plus* diffuse) must be regarded as potentially injurious to eyesight.

Writing-paper for school use should not give more than 54 per cent. specular reflection at 45 degrees, since young writers often look obliquely at the paper.

The committee finds that coloured maps can be produced without extra expense or difficulty on paper conforming with the above rules. In some instances the effect of using suitable paper has been spoiled by the use of glaze in the colours or inks. The glossiness of paper is greatly influenced by the extent and particular method of calendering, and it is suggested that careful control of calendering will assist in obtaining the desired hardness and the even surface required, without introducing pernicious gloss.

Mr. Trotter's description of his gloss tester is subjoined at the request of the committee, since the recommendations in this report require that some standardising instrument should be available.

AN INSTRUMENT FOR TESTING THE GLOSS ON PAPER AND OTHER MATERIALS.

The principle of the method is to illuminate a specimen of the paper or other material by light falling on it at an angle of, say, 45 degrees. The observer can examine the brightness of the specimen from a direction making an equal and opposite angle of 45 degrees. The effect of the gloss is then a maximum. He can also observe it from a direction nearly parallel with the incident light. The effect of the gloss is then a minimum. The instrument provides means for making these two brightnesses equal, and for comparing them.

The instrument consists of a box 15 in. (300 mm.) long, 8 in. (203 mm.) wide, and of about the same height. In the bottom there is an opening $3\frac{3}{8}$ in. (85 mm.) by $1\frac{1}{4}$ in. (44 mm.). The box may be laid on the page of an open book, and the part of the paper seen

¹ Report of the committee of the British Association, consisting of Dr. G. A. Auden (chairman), G. F. Daniell (secretary), C. H. Bothamley, W. D. Eggar, Prof. R. A. Gregory, N. Bishop Harman, J. L. Holland, Dr. W. E. Sumpner, A. P. Trotter, and W. T. H. Walsh, appointed to inquire into the influence of school-books upon eyesight.

through the opening becomes the specimen to be tested.

A small electric lamp carrying a pointer can be moved on a slide between two mirrors A and B. The lower part of the box is divided by a thin partition. Half of the specimen is illuminated from one mirror and half from the other. Two eye-tubes are arranged at *a* and *b* for observing the specimen, the view being obtained alongside the edge of a mirror. In each eye-tube there are a pair of acute-angled prisms edge to edge, by which the view of the thin partition may be cut out of view.

Let 100 be the total brightness, *d* the diffused brightness, and *s* the specular brightness. $100 = d + s$. The pointer attached to the lamp moves over a scale graduated from the formula $x = (10 - \sqrt{100 - s})L / 2(10 + \sqrt{100 - s})$

where *x* is a length on the scale measured from the middle points, the specular brightness at 45° expressed as a percentage of the total brightness, and *L* the total length from the middle point of the opening through which the specimen is seen, to one mirror, across

to the other mirror, and back to the middle point of the opening.

The whole instrument is bilaterally symmetrical, and, when the mirrors are properly adjusted, observations made from either end should give readings equidistant from the middle of the scale.

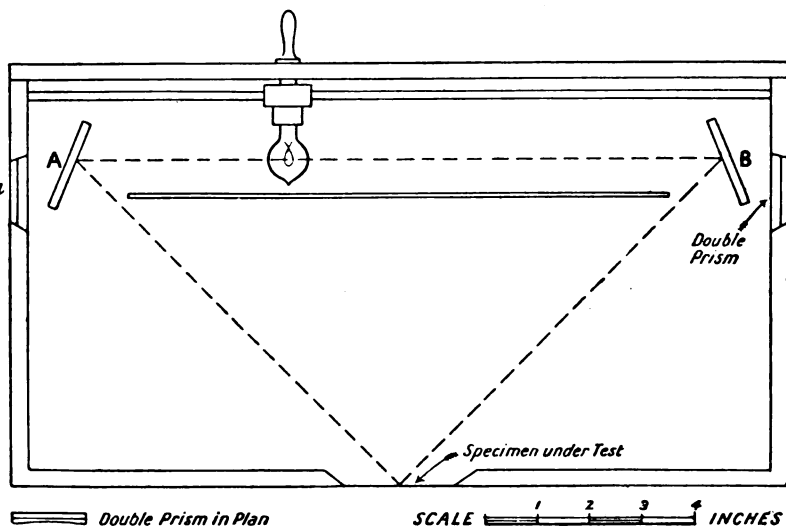
When a flattened layer of fine white powder, such as ordinary whitening, is tested, it is found practically free from gloss. In other words, the reflection is wholly diffusive, and there is no specular reflection. The brightness of the two halves is identical when the illumination is identical. The pointer is at the middle of the scale when the specimen is viewed from either end, and indicates $s = 0$, the total brightness consisting only of diffused brightness *d*.

If a sheet of paper is tested in this way, and is observed through eye-tube *a*, the brightness

of the half illuminated by reflection from the mirror B will be due to the sum of the diffused brightness *d* and of the partial specular brightness *s*. The brightness of the half illuminated by reflection from the mirror A is due to diffused brightness only. The lamp must therefore be brought nearer the mirror A to make the brightness of the two halves equal. If, when a balance has been obtained, the pointer stands at 66.6, this means that the brightness viewed from a direction nearly parallel to the direction of observation consists of brightness *s* due to specular reflection, which is twice the brightness *d* due to diffused reflection, and, therefore, 66.6 per cent. of the total brightness. As a check, an observation may be made through the other eye-tube.

When the specular brightness is more than

70 per cent. of the total brightness an imperfect image of the source of light begins to be formed. A bright glistening patch appears on one half of the specimen, and it becomes difficult to match this accurately with the brightness of pure diffused reflection. For this reason the



Instrument for Gloss Testing.

method in its present form is not applicable to materials having a pronounced gloss.

In adjusting the instrument it is laid on a mirror. The lamp is seen by reflection on one side of the partition, and when the lamp is moved it ought to appear to approach to or to recede from the eye in a straight line. The instrument should be used in a darkened room. The constancy of the candle-power of the lamp is immaterial; but it is advisable to use an evenly frosted bulb, as otherwise the asymmetry of the filament may introduce errors. The surface undergoing test should be quite flat.

A millimetre scale may be substituted for the percentage scale. The percentage of specular brightness at 45°, when the pointer is *x* millimetres from the middle of the scale, is then given by $s = 200Lx / (\frac{1}{2}L + x)^2$.

WAR-WORK FOR HOLIDAYS ON THE LAND.

By J. L. PATON, M.A.

Highmaster, Manchester Grammar School.

THE ordinary laze-on-the-shore holiday was out of the question. Everyone felt the same with regard to that. If the Kaiser spoke of organising every cat and dog in his Empire, it was up to us to organise our holidays. The most obvious suggestion, an O.T.C. camp, was ruled out, because all the officers, both commissioned and non-commissioned, if they were not actually joining the army, were requisitioned for training recruits. The most popular line for boys of over fifteen was work on munitions, but here the opportunities were limited, for the new sheds are not yet in working order. National registration gave scope to some; more than a thousand Manchester teachers were giving assistance in this. Scouts also had their definite lines of war service, and as soon as they reported were told off to duty at hospitals, or looking up soldiers' dependants, or other work in connection with the relief committee. But we are not all scouts. How were the rest of us to "do our bit" to meet the national needs?

The Headmasters' Association had sent us a circular, but it was not to be expected that they would be able to link us on to farmers who wanted harvest hands. I saw the local officer of the Labour Bureau and got some helpful hints from him. Two points he impressed upon me: first, that whatever work was done should be paid for at market rate; secondly, there were large numbers of women offering to help, and we should not undertake work which was suitable for them.

We have a camp near Grasmere every August. This year the military regulations forbade camping in Westmorland, and we had to cut down our party to forty so that we could sleep the majority, and, if necessary, all, in a barn. Friends in the district said that our help would be welcome in the hay-making, and, as soon as matriculation was over, we sent on two of our number to open the ball. The main party followed at the end of the month. Hay-making in the valleys was still in progress, and we expected to find outlets for energy in the upland farms later on. The upland farms could provide no accommodation for women; we could bring our own mountain tents slung over our shoulders and, if necessary, do our own cooking. Labour was scarce; the Irish labourers took fright at the idea of national registration; they thought if once they were on the register, they would be called up for military service. Labour was scarce, but sunshine was still scarcer, and farmers

were somewhat suspicious of city boys. "They're hearty, willing lads." "Oh, aye, 'arty, I know; especially at meals," was the reply. Some casual half-days were all we could put in. We offered to blaze a track up a mountain path which is dangerous in the dark. But the local committee opined that whitewashed stones would mar the beauty of the landscape.

Our other line turned out better. A large fruit-grower of Worcestershire offered to find work for sixty boys for six weeks. The main job was to be picking plums and apples for jam, but there was also to be potato lifting and harvest work. This bit of work has been most successful. There have been two parties, each working for a three-week shift. We fixed our camp on the estate. Three masters took charge of the catering department and such discipline as was necessary, and not a day was wasted. Every morning the bailiff sent in a message to say where he wanted his squads. Some were wanted for potato-lifting, some for hay; later on there was the wheat. But the bulk of the work was put in at the gathering of plums and apples. This was distinctly less popular. In idea it was most attractive, especially to town boys, but a few hours' work at picking hard, green plums soon begins to pall, and we found six hours' regular work per diem were as much as the lads could stand. We got the best results by working them in pairs, and the gradual increase in output went far to justify the farmer's contention that it was not altogether an unskilled job. At the beginning we did about 180 to 190 pots of apples a day. (A "pot" is not a pot, but a hamper, and means about 72 lb. weight.) At the end we got up to as many as 440, and that meant real hard work. The pay was 12s. 6d. a week for six hours' work per diem, with allowance towards railway journey and camp expenses. Accidents were few and insignificant. The bailiff provided expert ladder-fixers, and whenever a pair had cleared the part of the tree within reach, they shouted, "Ladder, please," and got it fixed by a competent man before starting again. Diarrhoea was provided for, but did not occasion trouble. Boys who could not keep fruit out of their mouths were cured by being put on to the baking apples. What did prove a trouble was the wasp plague. Few members of the party escaped; several were stung in the mouth. The wasps were so multitudinous and so predatory that you could hear them in the store-tent sawing their way through the thick paper covers of the jam-jars. All jam and sugar had to be kept in tins. The wasps worked their way also through the muslin of the meat safe. The

young pickers themselves will not be so passionately fond of jam for a year or two, I fear, for they have learned the business side of jam, they have learned some elementary economics of industry, they have learnt the joys of communal work; and, above all, they have done something for England.

What they thought of it may best be gathered from their letters.

"My brother's a soldier. I'm too young for the Army, so I thought I would come plum-picking. But I've not picked many plums. To my surprise, when I arrived here I was put on spud-lifting. I had three days of this, and then for more than a week I was put on apple-picking, which is not a bad job. You have long ladders to reach the upper parts of the tree, but you have to be careful when you are on the boughs or you might fall and end your war-work before the three weeks are over.

"We put in full time, and now know what it is to work. I can see you getting some cheap gardening in future, but I'd rather lift potatoes than weed a garden.

"One day we saw a number of old men in the potato plantation and thought they were too ancient to lift a spade. But couldn't they? They kept us working. After a time we became chummy, and they told us their ages. The oldest was eighty-six, and he worked like a man half that age.

"You are supposed to remove the soil before placing the potatoes in a barrel. I didn't know this, and when I emptied a basketful of spuds in the nearest barrel, the packer bawled out, 'Tha munna bring all th' soil from th' plantation.' Another time I lifted some very small potatoes, and, when I was about to put them in the barrel, the packer exclaimed, 'Eh! Eh! What's doing, mun? Them's fut pigs.'

"We shall all be ready for home next week. We've not had a picnic. If the lads have never worked before, they know now what work is. Of course, that is what we came to do."

THE EDUCATIONAL VALUE OF HISTORY.¹

By F. J. C. HEARNshaw, M.A., LL.D.
Professor of History, King's College, London University.

I.

THE Educational Science Section of the British Association differs from other sections in one important respect: it is the happy hunting-ground of the amateur. The subjects of some sections, such as those of botany and geology, are defended by formidable fortifications of technical terminology;

the subjects of other sections, such as those of chemistry and physics, are protected by the barbed entanglements of prohibitive formulæ. Only experts, armed with the most modern weapons of special knowledge, can hope to enter these sections or to maintain themselves there. But education is an open field. It has few technical terms and no formulæ. It is entirely undefended, except in so far as psychology has lent it a few notices asking people to keep off the grass—a request that is generally ignored.

Hence the meetings of the Educational Science Section are attended by representatives of most of the other sections of the association. When there is nothing special doing in their own departments they stroll in, and devote a pleasant hour of irresponsible leisure to the useful task of putting British education on the right lines. No doubt educational experts are present as well, but they play a subordinate rôle. They are content for the most part to listen, to marvel, and to record:

In majestic taciturnity
Refraining their illimitable scorn.

On the present occasion the section is being invaded by a body of men who come from outside the normal limits of the association altogether. For history, which they represent, is not among the sciences that the association is concerned to advance, and by many it is regarded as no science at all, but merely a branch of literature. Without, however, entering upon the vexed question of the status of history, I would merely express the hope that even those who would normally resent its discussion by a scientific society will allow the discussion on the present occasion as a war measure. For there can be no doubt that the war has caused a quite unprecedented demand for historical information on the part of the general public, and for historical instruction in schools. It is recognised that in history, if anywhere, is to be found the key to the causes of the colossal conflict. History, moreover, it is felt, may supply parallels that will make clearer the course of the struggle, and give some prophetic clue to the issue. History, again, it is admitted, must be taken into the fullest account if at the end of the war the mistakes of the past are to be avoided and a peace settlement made that shall not be a source of further strife.

The prominence which history has acquired during the past twelve months will probably result in its permanent establishment in a more important place in our national education than it has hitherto occupied. Hence it is desirable that we should consider what is its educational value.

¹ Summary of an address delivered before the Educational Science Section of the British Association at Manchester on September 8th, 1915.

II.

A few preliminary words must be said concerning the aim of education in general. In classical and in medieval times, when the unity and solidarity of the community was realised more fully than it is to-day, the aim of education was single, simple, and clearly realised. For example, Sparta trained the warrior, Athens the politician, Rome the man of affairs, Medieval Christendom the theologian and saint. With the Renaissance, however, the individual emerged; personal aims superseded communal aims; each man tended to go his own way. The purposes of education, therefore, became as numerous and as various as were the individuals to be educated. Unity disappeared; chaos supervened. Out of that chaos we have not yet emerged, although educationists have done much to make the future ways of emergence clear. Those who still regard the development of the individual as the dominant object to be pursued are divided into three groups.

(1) Those who would content themselves with fitting the individual for his life's occupation.

(2) Those who would endeavour primarily to develop in him general mental force without respect to the direction in which he may later apply it, and

(3) Those who would devote their main efforts to the unfolding of moral character.

Besides these three groups of intellectual individualists, however, there are others, a growing band, who would recall education to its old communal vocation, and would for practical purposes make its chief end the training of citizens. I admit that I belong to this company of educational communists. For it seems to me that the only hope of modern democracy lies in an education—technical, intellectual, and moral—which shall enable it to perform the colossal task of government which has devolved upon it, and shall give it a character commensurate with its responsibilities. Democracy, especially during recent years and in this country, has manifested some most disquieting symptoms. The constant appeals of politicians to the self-interest of the electorate has degraded the moral tone of the nation. Frequent recourse to violence and successful defiance of authority have threatened respect for law. The formation of anti-national groups has seriously broken the unity of the State. I confess that I view the situation with profound uneasiness, and only in education—using that term in the widest sense to include all the moral and religious influences in our midst—can I see hope of democracy's salvation. It would be beyond my sphere to discuss the scope and content of an adequate education designed for this civic end. All I

have to do now is to indicate the value of history as one of its factors.

III.

To begin with, history is part of the technical training of the statesman and man of affairs. The Regius Professorship at Oxford was founded in 1724 expressly to prepare young men for "the business of the State," and from the pupils of the professor the Civil Service was recruited. Similarly, J. R. Seeley, when holding the Regius chair at Cambridge, made the historical curriculum of the University a school of government. The number of practical administrators is, however, limited. History serves wider purposes in respect of the mass of the community. It serves, for instance, the purpose of intellectual training: it develops the imagination, accustoms the mind to trace the sequence of cause and effect in human affairs, provides practice in the weighing of doubtful evidence, and fosters a spirit of judicial impartiality. This latter is a moral as well as a mental quality, and it leads us to note the more definitely ethical tendencies of historical study. Of course, no responsible history teacher would allow that the history lesson should be made the vehicle of extraneous moral precepts. The sequence of goodness and prosperity in human affairs is unfortunately no more clearly evident than is the sequence of virtue and survival in organic nature. Any teacher who persists in turning his historical instruction into a series of edifying moral episodes will do so only at the sacrifice of truth, that is, by an entirely immoral process of selection. No; the moral value of history is inherent in its nature. Irrespective of the ethical quality of its content, it widens the horizon of the mind, it brings the student into contact with men of larger build than those with whom he normally associates, it awakens dormant sympathies, it shows the connection between character and destiny, it teaches "awe at the prodigious mansidedness and endless significance of human activities." Further, it has political value. It furnishes a training in political method, in the process of argument from uncertain data, in the balancing of conflicting opinions, in the treatment of complex and controversial themes with coolness and impartiality. Moreover, it supplies a storehouse of political precedent invaluable as a guide to present-day political conduct, and thus it proves itself to be the indispensable basis of political progress.

Hence history must play an increasingly important part in the education of any democracy which is to rise to the height of its responsibilities and opportunities.

PERSONAL PARAGRAPHS.

CAPT. M. P. ANDREWS, 4th Duke of Wellington's Regiment, headmaster of Hipperholme Grammar School, Yorks, was killed on August 14th. He was educated at St. Salvator's School, St. Andrews, Sedbergh School, and Oriel College, Oxford. After a course at Prof. Rein's Experimental School at Jena and at Prof. Passy's lectures at the Sorbonne, Mr. Andrews was a master for three and a half years at St. Mary's School, Melrose; for six months at Wyggeston Grammar School, Leicester; for four years at Bolton Grammar School, for two years at Queen Elizabeth's College, Guernsey; and for two and a half years at Lancing College, before being appointed headmaster of Hipperholme Grammar School in 1911. Capt. Andrews obtained his commission while at Lancing, and on going to Yorkshire was attached to the West Riding Regiment; he was promoted Captain in October, 1914. The Major-General commanding his division recently spoke most highly of him as a company commander.

* * *

CAPT. W. EYRE, 12th Welsh Regiment, attached 1st Lancashire Fusiliers, has died of wounds received at the Dardanelles. He was educated at King Edward VI. Grammar School, Retford, and Sheffield University. After graduating B.Sc. at London University he returned to Retford as science master; he was for eight years on the staff of Christ's Hospital, where he was an officer in the O.T.C.

* * *

LIEUT. E. J. C. SUPPLE, 6th Duke of Wellington's Regiment, who was recently killed, was educated at Ripon Grammar School. While a master at Skipton Grammar School he enlisted in the 6th Duke of Wellington's Regiment, refusing to take his commission until he had completed his service in the ranks. He was keenly interested in the cadet corps at Belvedere School, Brighton; while a master there he raised it to a high standard of efficiency, both in drill and marksmanship. Mr. Supple was an enthusiastic sportsman and well-known player, both of cricket and football.

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LIEUT. L. ROBINSON, 9th Lancashire Fusiliers, has been killed at the Dardanelles. Lieut. Robinson was the son of the Rev. J. H. Robinson, who has two other sons now serving the country. Lieut. Robinson was a member of the O.T.C. while at King's College, London, where he took an active part in the College societies, both social and athletic.

He graduated with honours at the B.Sc., London, and was appointed a master at the Day School of Commerce, City of London College; he was an enthusiastic teacher, and exercised a powerful influence upon his pupils.

* * *

PROF. HENRI CHATELAINE, D.-ès.L., who had held the chair of French in Birmingham University since 1909, died in a military hospital in Paris on August 10th; his constitution had been much weakened by a winter in the trenches near Soissons, and in April he contracted a dangerous illness, to which he succumbed. Prof. Chatelain was, says the *Times*, a scholar of wide interests, but his special field was French of the fourteenth and fifteenth centuries, upon which he was a recognised authority. "At Birmingham he soon proved himself no less able as a teacher and organiser than as a scholar. His high ideals of learning, his unsparing devotion to his university duties, his gracious manner, and his simple dignity of character, won for him the respect and affection of all with whom he came in contact."

* * *

CAPT. T. P. BLACK, 9th Sherwood Foresters, registrar of the University College, Nottingham, was killed at the Dardanelles between August 7th and 11th. He was educated at Gordon's College, Aberdeen, and at Queen Elizabeth's Grammar School, Darlington; he was for some time assistant in physics at the Durham College of Science, Newcastle-on-Tyne, and in 1907 became assistant in physics at University College, Nottingham, of which college he was appointed registrar in 1911.

* * *

THE adaptability of schoolmasters and the value of the services of volunteer workers in the harvest field are borne out by a letter recently printed in the *Times* from Mr. Henry Overman, Kipton House, Weasenham, Swaffham:—"Labour is short, although I am paying £9 each man for the harvest. I am running a harvest camp of about twenty men—all schoolmasters. The schools represented are Eton, Uppingham, Royal Naval College, Dartmouth, Berkhamsted, Aldenham, St. Edward's School, Oxford, Woodbridge, Trent College, Derby, Mill Hill, and several others. The men are a great success, working hard and doing their work particularly well. How they have caught on to the work is extraordinary; no day seems too long for them. They will shorten my harvest by quite a week, which is good for both my men and myself. If I could have these men all the year round, what a comfort it would be. In two months they

could be trained as 'perfect agricultural labourers' who could do any skilled work."

* * *

LIEUT. W. T. FORSHAW has been awarded the Victoria Cross. He was educated at the Barrow Secondary School and the Westminster Training College; he taught in an elementary school, and when the war broke out was a master at the North Manchester School, preparatory to the Manchester Grammar School. He volunteered for service with a Territorial battalion of the Manchester Regiment, which was sent to Gallipoli. A short leader in the *Times* of September 11th tells the story:—"Lieut. Forshaw encouraged his men to hold their own against repeated attacks by the enemy. He set them an example of heroism by a cool disregard for danger. When, after twenty-four hours of fighting, they were relieved, he volunteered to continue directing operations. For another seventeen hours he continually threw bombs at the enemy. Choked by fumes, bruised by fragments of shrapnel, hardly able to lift his throwing arm for fatigue—he endured till the position was safe. 'It was due to his personal example, magnificent courage, and endurance,' says the official announcement of his reward, 'that this very important corner was held.' If we know anything of schoolboys, there were few in Manchester who did not read of this great achievement by a Manchester schoolmaster with devoted admiration and a resolve to do the same if the chance ever came."

ONLOOKER.

EDUCATIONAL RETROSPECT AND OUTLOOK.¹

WHEN I look at the names of many of my predecessors in this presidential chair, when I read their addresses, or when I consider what the work of the Section ought to be, I feel that an apology is needed for my being here at all.

Let me say at once, however, that it is not because of my being a woman that I feel this. It is true that I am the first woman who has had the honour of presiding over Section L. But it is obviously very fitting that a woman should sometimes do so; and this not only because women are as much concerned with the results of educational science as men are—that might be said about all departments of science; nor only because the material on which education works—the human material to be educated—is approximately evenly divided between the sexes. A more important consideration is that women have the largest share in the work of education. This is clear if we take education in its widest and fullest sense, and include in it what is done in the home as well

as in the school, beginning as it must with the earliest infancy. But it is also true if we limit the meaning of the word education—in the way that is constantly done, and is I think usually done in the discussions that take place in this Section—to that part of it with which the professional educator, the school or college teacher, is concerned. For the fact that the school teaching, not only of girls, but of the younger children of both sexes, is mainly in the hands of women, results of necessity in there being a larger number of professional teachers among women than among men.

May it not be added that in some departments of education women have appeared to take their profession more seriously than men so far as this can be measured by the trouble taken in training for it? For I think I am right in saying that among persons proposing to teach in secondary schools more women in proportion than men have hitherto availed themselves of opportunities for professional training.

From another point of view, too, the education of women and girls has an interest which, though not different in kind, is greater in degree than that of the other sex. I mean in the rapidity of its growth and development since the middle of the last century. The development of school and university education and of technical education has, of course, been very great for both sexes. Much attention has been devoted to improving its quality, and perhaps even more to increasing its quantity, by making it more accessible to all classes of people. But in the case of girls and women the progress has been greater and more remarkable than in that of boys, for it started from a lower level, and notwithstanding this it would, I think, be difficult to point out in what respects the educational opportunities of women are now inferior to those of men. I say this, of course, in a general sense, and without prejudice as to controversial questions of detail such as the merits of the methods and curricula deliberately adopted for different schools.

The Report of the Schools Inquiry Commission published in 1868, in what it says about girls' education at that time, gives us a standard of comparison and a means of estimating the progress made. It has often been quoted, but may bear quoting again. The Commissioners say: ²

"The general deficiency in girls' education is stated with the utmost confidence, and with entire agreement, with whatever difference of words, by many witnesses of authority. Want of thoroughness and foundation; want of system; slovenliness and showy superficiality; inattention to rudiments; undue time given to accomplishments, and those not taught intelligently or in any scientific manner; want of organisation—these may sufficiently indicate the character of the complaints we have received, in their most general aspect. It is needless to observe that the same complaints apply to a great extent to boys' education. But on the whole the evidence is clear that, not as they might be, but as they are, the girls' schools are inferior in this view to the boys' schools."

This was what could be said of schools in 1868, and is certainly in striking contrast to what could be said now. And if we turn from the schools to higher education we find this was practically non-existent for

¹ An address delivered to the Educational Science Section of the British Association at Manchester, September 8th, 1915, by Mrs. Henry Sidgwick, President of the Section.

² Report of the Schools Inquiry Commission, p. 548.

women at that time. Its absence was indeed one cause of the badness of the schools. The schools were bad because the teachers were inadequately educated. "The two capital defects of the teachers of girls," as one of the Assistant Commissioners (Mr. Bryce, now Lord Bryce) reported, "are these: they have not themselves been taught and they do not know how to teach." These defects were, of course, partly due to the badness of the schools, and the want of any standard enabling the general public and the teachers themselves to judge of their badness. So far it was a vicious circle. The teachers were badly taught in bad schools and handed on the bad results to the schools they later taught in. But the defects were partly due to the absence of opportunity for them to carry their own education beyond that of their elder pupils—to obtain that higher education which men obtained at the universities. This was pointed out by the Commissioners, and their report acted as a great help and encouragement to those who had already realised the need of higher education for women, and gave an important stimulus to the foundation of colleges for women, first at Cambridge and then at Oxford.

The Commissioners' report also greatly encouraged the movement already in progress for the improvement of girls' schools—the movement in which Miss Buss, of the North London Collegiate School, and Miss Beale, of the Cheltenham Ladies' College, were among the pioneers, and in which the opening of local examinations to girls in 1865 by Cambridge was an important step. The cautious and anxious way in which the Commissioners refer to the possible effects on girls of more exacting school work and of examinations is amusing to read now. But the report of the Commission helped in the progress of girls' education in still another way, for it was instrumental in securing the recovery for the secondary education of girls of endowments which had been allowed to lapse into the service of primary education or to be absorbed by boys; and the division between girls and boys of some endowments not specifically assigned to either sex by the founders. Twenty years ago—in 1895—the Charity Commissioners in their annual report gave striking testimony to what has been done both in this way and by new endowments:—

"There is reason to think," they said, "that the latter half of the nineteenth century will stand second in respect of the greatness and variety of the charities created within its duration to no other half-century since the Reformation. And, as to one particular branch of educational endowment, namely, that for the advancement of secondary and superior education of girls and women, it may be anticipated that future generations will look back to the period immediately following upon the Schools Inquiry Commission and the consequent passing of the Endowed Schools Acts, as marking an epoch in the creation and application of endowments for that branch of education similar to that which is marked, for the education of boys and men, by the Reformation."

And the flow of endowments for this branch of education has not ceased since the report just quoted from was written. As examples of it I may remind you of the St. Paul's Girls' School, the extension

and rebuilding of Bedford College, University of London, and the large sums given for the domestic department of King's College for Women.

Though, however, as the Charity Commissioners say, a great impulse was given to girls' education by the report of the Schools Inquiry Commission and the legislation as regards endowments that followed, I think that, even without these, great progress would have been made, though probably less rapidly. The desire for it was already there. Women who had themselves suffered from the previous deficiency were working for improvement, and sympathetic men friends were helping. It was becoming more and more obvious not only that women teachers must have adequate opportunities of learning, but that the home no longer in itself afforded sufficient scope for the energies of the daughters, especially unmarried daughters, of the professional classes, and that they must be trained for other useful work. The supply of suitable education followed the demand, as generally happens when the demand is strong and clear. The very mention by the Charity Commissioners in the passage I have quoted of the *creation* as well as of the *application* of endowments for the purposes of female education is evidence of the active public interest in the matter. The spirit which has led during the last half-century to the liberal endowment of education for girls and women from private sources has also led the State, and public bodies generally, to consider girls equally with boys in all public administration of education or of educational funds. The same spirit has led the newer universities without exception to admit women to their benefits on equal terms with men. And at the same time the creation of some professions and skilled industries—e.g. sick nursing—by women, and the opening to them of others, together with the general movement in favour of professional training for professional work, have led to the great development of opportunities of technical or vocational training for women as well as for men.

This immense—almost revolutionary—change, as regards educational opportunities for women, which has occurred within the recollection of people of my age, and which must be attributed largely to the efforts of women themselves, is, I think, very striking; and it certainly, as I said, fully justifies the selection of a woman to preside over the Educational Section of the British Association. The apology I feel to be needed is for the particular woman selected. For it is the science of education, or at any rate the science and art of education, that this Section presumably exists to advance, and I am no educator, no teacher; I have made no psychological study of young people from an educational point of view, nor of the different methods of teaching suited to different ages, no statistical investigation of the influence or particular curricula in training the mind or furnishing it with useful information. I have, in short, neither made contributions to the science of education nor practised the art. Any work I have done has been on the administrative side, and I can speak only as a member of the general public—not as an expert. And what is there new, in a subject so much discussed, for a

member of the general public to say? An illuminating address is, I fear, in the circumstances impossible.

Not that I regard the view of the general public as unimportant. Indeed, I am not sure that a good case could not be made out for having a mere member of the general public as such as president from time to time. The general public must, as all will admit, decide what is to be spent on education, or, more strictly, on schools and colleges and professional educators, out of both public and private income—it is for them to decide on its relation to other social and family needs. But the concern of the public with education is not merely financial and administrative. It is more intimate than that. For education is not a subject like physics or chemistry on which only an expert has a right to an independent view. There are, no doubt, aspects of it of which only the expert can properly judge, there are experiments in it which only the expert can advantageously try, and there are, of course, departments of it in which the opinion of the expert is indispensable. But without depreciating either the science or art of education, it is clear that when we take education in its widest sense it concerns everybody, and almost everybody is bound to have views about it. Each generation as a whole is responsible for handing on to the next the control over matter and mind, and the power of co-operation, which it has itself inherited from its forbears and added to, and which it must put its successors in a position to add to further. It is on this that the progress of the human race depends; without it each generation would have to start afresh from the beginning, and we should still be in the position of primitive man.

But the larger and more important part of education in this wide sense is done first in the nursery, and then, as the child gets beyond babyhood, by means of its own observation and imitation of its elders; while much is done by experience gained in mixing with others of its own age, and much by the exercise of responsibility. The education thus obtained, combined with precepts and with tales handed down orally, sufficed for our ancestors until the increasing complexity of life made it important for the rising generation to acquire skill and knowledge which mere imitation and experience could not give. When this happened division of labour took place in this as in other departments of life, and led to the introduction of the professional educator—that is, the educational expert who has the art of imparting the needed knowledge and skill, or at least of shortening the process of acquiring them. We may observe that his services are now required by all, and not, as was once the case, only by those preparing for the learned professions. This work of the professional educator is what our Section of the British Association is mainly concerned with, and the methods to be employed are best judged by the professional educators themselves. But the co-ordination of their work with the whole process of education, its place in the production of good citizens, must, as I have said, be judged, not by the professional educators alone, but by the whole body of the nation. The general public must not only be regarded as capable of exercising judgment on educational

matters, but should be encouraged to feel that it is its duty to do so.

If we judge by the amount of talk which goes on about education, it would perhaps seem that the public is fully aware of its responsibilities. And yet I think there are indications that in some respects it fails to grasp them, and is disposed to depend too much on the professional educator; allowing itself to be confused by our habit of using the same word "education" in both the wider sense, of which we have been speaking, and also in the narrower sense of book-learning. The sense of proportion seems to me to be sometimes seriously lost from this cause.

I was impressed with an example of this exhibited a little while ago in a correspondence in the *Times* about the employment of the older boys in the elementary schools of country districts to do some of the work on the farms in place of farm-hands who have enlisted. One group of the correspondents, looking at the question from the point of view of agriculture, thought the advantage derived by the boy from his last year of school training was of small value to the country compared with the work he could do on the farm. The other group, looking at the question from the point of view of the school, thought it monstrous that what they called the "education" of the boy should be in any way curtailed. I am not at the moment concerned with the controversy itself, nor am I taking the side of either group of disputants. There is, of course, much to be said on both sides, and the decision should probably vary with the locality, and the work, and the farmer, and the boy. But what struck me was that all the disputants seemed to regard education as beginning and ending at school. None appeared to think of it in its wider sense. None referred to the great effect it might have on the boy's future life and character to feel that in a grave national crisis he had "done his bit"—an effect which would perhaps be all the greater if he felt he was sacrificing something to make up for which special effort might be needed later. I have seen the view of the gain to boys and girls from helping in the emergency put forward since, but not in the particular newspaper controversy in question, nor, I think, in connection with the loss of a year of schooling.

And there was another aspect of the question which did not seem to excite attention. I mean the possibly bad educational effect, in the wide sense, of preventing the boy from doing the work. To keep him at school, if he was conscious that his services were needed elsewhere, could not but tend to concentrate his attention on himself and the importance of his own schooling, and could not but tend to produce to some extent the deplorable temper of mind which leads some young people, a little older than the schoolboys over whom the controversy raged, to regard self-development as the aim and object of existence. This is certainly not the attitude of a good citizen—and to produce good citizens should, as we probably all agree, be the principal aim of education.

The particular difficulty to which I have referred seems inseparable from compulsory education, and probably cannot be altogether got over. The thoughtful girl of twelve, not absorbed in herself, must some-

times wonder whether her school-work is really as valuable as the help she could give her mother in some special difficulty or strain, except on the assumption that her own development ranks above all other objects.

Of course, the higher the relative value we put on scholastic education the less important will the loss of other educational influences appear to us. And perhaps at this point I had better frankly confess—what is, I fear, another defect in my qualifications as president of the Educational Section—namely, that I am not an enthusiast about education in the same sense that most of my hearers probably are. I read the other day in a review of the life of an American educationist that—

“He was penetrated with two characteristics which are the saving clause of the American and every other democracy, a reverence for learning and a flaming belief in education as the condition of success in any scheme of popular self-government.”

In the reverence for learning I am with him, but I could not describe my belief in education—education, that is, in the sense here meant, namely, school and college education—as “flaming.” I cannot, for instance, believe, as some seem to do, that by keeping children a year longer at school we should regenerate mankind, or at least secure as a matter of course great improvement. Why, you may ask, if I am not an enthusiastic believer in education, have I spent so much of my life—my time, my energy, my means—in helping to provide opportunities of university education for women? The answer is that I do believe very much in giving to as many people as possible educational opportunities—meaning by that in the first place the means of preparing for their work in life. Those who are going to teach, for instance, must obviously learn first, and, as I have just reminded you, women’s opportunity of doing this was lamentably deficient half a century ago.

But secondly—and this is not at all less important—I mean by educational opportunity the means of satisfying intellectual curiosity, every spark of which should be fostered. For it is to intellectual curiosity that progress in knowledge, including physical science, is mainly due. And intellectual curiosity is an important adjunct to the mental processes involved in understanding the world we live in, a valuable aid in the formation of a good judgment, and a great assistance in practical life. Intellectual curiosity and æsthetic sensibility are, moreover, the mainsprings of culture—that is, of some of the highest pleasures we can enjoy.

You will doubtless agree with this, and will agree, further, that without intellectual curiosity no amount of accumulated information can be properly assimilated, or will produce either culture or knowledge of permanent value. In its absence the pupil may pass through school and college with little advantage apart from discipline, beyond the acquisition of elementary skill in reading, writing, and arithmetic, and if he has a good memory a barren knowledge of some facts. You will probably add that it is one of the most important functions of the teacher to endeavour to produce this intellectual curiosity when absent or in

abeyance, and that the zeal of the professional educator in this direction is a strong reason for enthusiastic belief in school education. It would be, I grant, if we could hope that the teacher’s success would always be equal to his zeal; but notoriously this is far from being the case, and the failure is by no means always due to want of intelligence in the pupil any more than it is due to want of capacity in the teacher. In many cases, in all classes of society, the spark of intellectual curiosity—the response in the pupil’s mind to educational stimulus—cannot be fanned into flame through book-learning alone, and yet may be there all the time ready to burst forth when it comes into contact with the needs of actual life and work. It may even be there, and fail to respond to imposed lessons, while it would blaze up if the pupil could by any means be induced to desire to learn before he is taught. It is partly because it is so important, if and when the desire to learn comes, that the boy or girl, man or woman, should be armed with the instruments which may give them independent means of acquiring the knowledge they desire, so far as this can be acquired through books, that we compel parents to send their children to school. No doubt, however, an even more important reason is our now almost universal use of reading and writing as a means of communicating with each other. The more widespread these arts are, the harder it is for anyone who has not acquired them to keep abreast of his fellows. But even now it would, of course, not be impossible, and the use of such phrases as compulsory education, in which education merely means the reverse of illiteracy, tends, I think, in itself to obscure the apprehension of what education really is, and to reduce the general sense of responsibility for it, and particularly that of parents.

Many years ago, before the days of compulsory education, or at least before it had time to produce any effect, I knew a man in the south of England who had had no school education, or practically none. I believe he could read a little with effort, but he could neither write nor keep accounts, so I was told. His wife did these things for him when they were necessary. He was, however, a good farmer, farmed a considerable amount of land, and acted as manager or agent under the landlord for a large estate. He knew his business thoroughly, had the power of managing men, and was much respected. It is impossible not to regard such a man as a more valuable member of the community, and a better-educated man in some respects, than many of those who climb the educational ladder to become clerks in an office. But, of course, such a man must have regretted that he had not had opportunities of schooling in his early youth—that he had not acquired the art of writing while he still had leisure. The want of the three R’s must have been a serious handicap, only overcome by unusual ability. And, in fact, no one now doubts that it is almost as important to acquire these elementary arts as to learn to speak or walk. It is with the question of carrying school education further that doubt arises whether it is really the best education for everybody, and whether we ought to regard the person whose scholastic education has been longest,

or who has succeeded best in examinations, as therefore necessarily the best educated.

I do not mean in saying this to set the practical man above the man of learning. Of course we want both, and we should like our schools to help to develop both. The value to the world of good scientific and literary work is enormous. And so far as science is concerned the British Association exists to bring home to the general public its value and interest, and consequently the importance of men who can advance it. Nor do I mean in what I have said to suggest any divorce between practice and learning. The business of most of us is practical, but what is to be desired is that everyone capable of it should combine practical ability—whether in manual work, or in organisation or administration, or in any other line—with a desire to learn; and that not only in relation to his work in life, but in a wider sphere. And, of course, we must wish that the means to satisfy this desire should be within everyone's reach. My point, therefore, is not that learning is not valuable, but that it is of little value unless it meets a desire in the learner's mind. And here the parents come in. The required attitude of mind is much more likely to be inspired by parents who possess it, than it is by the school. Or let us say that those children are most likely to grow up with it whose parents combine with the school to stimulate it. Unfortunately the result of compulsory primary education has not been to promote any sense of responsibility in parents as regards this; at least that is my belief. And I may, I think, appeal to Scottish experience in support of it.

The institution of parish schools is, as is well known, older in Scotland than in England. They date there from the Reformation, and were part of the ecclesiastical organisation initiated by John Knox. In the scheme drawn up by him and his colleagues education had a great place. The parish schools, in which Biblical instruction was foremost, were put in charge of the Church and long needed its efforts for their maintenance. Starting in this way the zeal for school education had become traditional. All respectable parents aimed at giving their children the best education they could. There was a strongly rooted sense of duty in the matter, and this from a double motive. They sent their children to school not only to help them to get on in the world, but because of the traditional association of knowledge and religion. Observe the educational value of this second motive. I am not looking at it from the religious point of view—that is not my business to-day. But as an instrument of culture the value of a desire for learning, based on something other than its relation to worldly success, is obviously great. It may be that the school education actually prevailing in Scotland is better now than that of fifty years ago, that the examination of the school inspector is more searching, if less stimulating, than was that of the Presbytery, that the average or backward child is less sacrificed to the clever one than used to be the case, and that general intelligence is more developed. But the parents, who felt their children's schooling to be their private concern, valued it more, took more personal interest in it, and felt more personal responsi-

bility for their children's progress than parents can do now. And it is a serious question whether the loss of this close link with home life has not had a bad educational effect, taking education in its wider sense, which is not compensated for by possible improvement in the schools.

I must admit that in saying this I have in mind only a limited area. I have made no wider investigation. The population I am thinking of is an entirely rural one in a purely agricultural district in the south of Scotland, with which I was intimately acquainted as a young woman, and which I re-visit from time to time. In such a district compulsion to send the children to school was unnecessary. It probably was required in the large towns and the more industrial parts of the country. I do not complain of the introduction of compulsion, but it did strike me at the time of its introduction that it was of very doubtful advantage in my own part of the country, and this impression has not diminished since.

To see if it was shared by others I wrote to a friend, more familiar with the district than I am now, to ask whether he did not think that parental interest in the children's school education had decreased, and also whether he thought that, as judged, for instance, by the books they borrowed from the parish library, the grown-up population was less inclined to serious reading than they used to be. I received from him a very interesting reply. He agreed with what I have just said as regards the first question, and after speaking of the warm and genuine wish in old times to give the children a good education, added:—

"The parents might, indeed, let their older children be absent for short times from school for light farm work or the like. But this was more than made up for by the zeal with which they were sent to winter evening classes, which could be gathered then far more easily than now. It is an unfortunate effect of legislation that it has largely deprived us of the great asset we had in the keenness of parental interest. It came about in this way. Government made it compulsory that no child should be employed in wage-earning who had not passed the fifth standard. Almost instantly the ideal of our people was lowered. A child was "educated" who had passed the fifth standard! And when by and by Government made it compulsory that a child should be at school till fourteen years of age, the parents in many cases felt this hard upon them, and our School Board every year has applications for permission to children to work before they are fourteen on various pretexts. I do not say that our people are not interested in their children's education. They still inherit that interest. But *compulsion*, and the fact of the responsibility being taken by Government, has greatly changed their attitude."

With regard to my second question—"Whether there is in country parishes as much reading of serious books, books of weight, history, travels, etc."—he says he "must answer *No.*" He thinks that the young people are perhaps more intelligent than they used to be, "but the reading is in enormous proportion novels and very light literature." He goes on to tell me of an old man who died two years ago "of the finest old Scottish type—devout, independent, interested in religious reading, in lives of men like Livingstone, in travels (he was reading Nansen in his ninetieth year and most interested in his nearing the Pole).

But the list of books in his steady reading from the library here was of quite different character from that opposite other names in our catalogue of the same rank." He says also that forty or fifty years ago good audiences could be got for lectures—historical, travel, etc., but that now a good audience can only be got for concerts, entertainments, or at most lectures with lantern pictures. All this seems, so far as it goes, to show a diminution in culture, in capacity for the higher intellectual pleasures, in fruitful curiosity. My correspondent is not prepared, however, to say that this change is due to changes in school education. It comes, he thinks, "of the different spirit in young people, less under authority, indulging more in pleasures, not pressing hard or thinking they need this in order to get on." He thinks, in short, that the young men now are more self-indulgent and less energetic than they were, and he looks to the nobler spirit which the war has called out to carry us into better ideals of life. He may be right in thinking that causes independent of school education have produced the result. But we must admit that if it is true that, concurrently with a school education improved in some important ways, there has been a diminution in intellectual interests—in culture, in short—the school education has at any rate failed in one of the objects aimed at.

Well, you must take these views about a particular country district for what they are worth. Facts observed among a comparatively small number of people may not represent the average. Moreover, my correspondent and I are both old—we could not remember, or think we remembered, the state of things fifty years ago if we were not—and you may, if you think proper, discount what we have to say, on the almost proverbial ground that old people put the Golden Age behind them. I am not, however, myself conscious of any such tendency. I believe very much in progress, and look forward to a gradually improving world, and I believe we are on the whole improving in educational ideals and educational methods as in other things. But it behoves us to watch what we do, and not to acquiesce, if we can possibly help it, in loss on one side without being very sure that it is more than compensated for by gain on the other. The loss of the parents' real co-operation where it has existed, and the failure to gain it where it has previously been absent, is serious. It is serious even if it is limited to the intellectual side of education and does not extend to the formation of character, as I fear it sometimes does. With the greatest zeal the school-master cannot replace the parents, nor even the parents' influence in producing the right attitude of mind in the pupil. And it is at the very least doubtful whether the better teaching which improved methods secure to the pupil can make up for any loss of spontaneous desire to put his own mind into the effort of learning for learning's sake.

And so I come back to the point that the general public must be encouraged to take its share even in the part of education carried on at school and college, and in particular those members of the general public who are parents of pupils. But this conclusion is

rather barren, for I have no very definite plan to suggest for carrying it out. The State cannot now, even if it would, abandon the responsibility for the elementary school education of the children, and even if it could it is more than doubtful whether it would be desirable. For though we have now secured that all parents shall themselves have had school education, we still cannot trust them all voluntarily to give that advantage to their children. So the drawback must be put up with that parents cannot feel the same degree of responsibility resting on themselves when the responsibility is undertaken by the State.

It is to be hoped, however, that we shall be very careful how far we entrust to the State the regulation of education higher than the primary. Bureaucratic regulation may be well adapted to produce German *Kultur*, but it is not the way to secure the attitude of mind which leads to freedom, independence of thought, and culture in the best sense. And it is very apt to lead to want of independence in the teacher.

Probably our best hope for progress in the right direction lies in movements like the Workers' Educational Society to satisfy spontaneous desire to learn. As this movement extends we may hope more and more to get a generation of parents who, having themselves experienced intellectual curiosity and the joy of satisfying it, who, having themselves felt the gain of a wider outlook on men and things, may by their example inspire their children with a similar disinterested desire for learning and culture.

METHODS AND CONTENT OF HISTORY AS A SUBJECT OF STUDY IN SCHOOLS.

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LIKE every other subject of school study, history has two distinct purposes to serve. On one hand it is a valuable implement for the training of particular mental faculties. On the other, it represents a body of valuable knowledge, with some part of which it is desirable that the pupil should be equipped for the purposes of his life. These two ends of historical study are, of course, not necessarily inconsistent. But it is possible for a scheme of study to achieve one of them without achieving the other. It is possible also to achieve neither, by wavering between the two. And the content of the subject, and the methods by which we handle it, will depend upon the relative importance which we attach to each of these distinct purposes, and upon the interpretation which we give to them. It will be convenient, therefore, to begin by considering our subject in turn from each of these points of view.

There are several faculties or qualities of mind which historical studies are uniquely qualified to cultivate and train. In the first place, it can afford an unequalled training and discipline for the faculty of *imagination* as applied to human affairs; the power

¹ A paper read before the Educational Science Section of the British Association at Manchester on September 8th, 1915.

of imaging or realising conditions of life, problems of conduct and motives, which lie outside the experience of the student. No mental faculty stands more in need both of stimulation and regulation; and no other element in the school curriculum provides a comparable material for this training. In the second place, history affords a training in *judgment*—that is, in the power of reasoning justly, not (as in the natural sciences) from fixed premisses to demonstrable conclusions; but (as in ordinary life) from an incomplete knowledge of the circumstances, and from insecure estimates of character and motive. This is a kind of reasoning which every man is called upon to employ every day of his life, and the school course supplies no means of training him to use it so direct as the history lesson.

In the third place, history is obviously the supreme means of implanting in the pupil the habit of asking himself, in regard to any problem by which he is faced, how the circumstances with which he has to deal have come about; of teaching him that the only way of attaining comprehension of any situation is to investigate the sequence of events which have brought it into being. In the fourth place, there is no other subject of the school curriculum which provides a similar opportunity for training the pupil to evaluate human evidence, and to know when the wise man will be sceptical, and when, and under what limitations, he will be willing to give his confidence to the testimony on which he has to form his conclusions. Lastly, history, more than any other subject, can help its student to sympathise with and understand conflicting points of view at the same time; to realise that men may be diametrically opposed and yet be honest; in short, to acquire the habit of tolerance, which is essential in a free society.

Now, if we fix our minds exclusively upon the use of history for the purpose of giving this sort of mental training, our first conclusion must be that it does not in the least matter what period of history is employed for the purpose. In so far as they can be attained at all, these ends can be attained by an intensive study of some period entirely remote from the students' own age and country. They can be attained perhaps better from a study of the history of the great age of Greece than from any part of modern history, because the scale on which the events take place is sufficiently small to be easily handled; and still more because these events have been recorded by very great writers, themselves saturated with the spirit of the civilisation which they describe. And this is, I take it, the main justification for the superficially disproportionate emphasis which European educational systems have during four centuries attached to the study of the ancient world.

Though the public schoolboy of the old *régime* learned nothing about the immediate background of his own society, yet he could, and often did, acquire from his intensive study of the ancient world the main intellectual advantages of historical study in an unusual degree. His imagination was stimulated by his introduction to a society widely different from his own, yet composed of very living and inspiring men.

His power of judgment was improved by the opportunities which he had of observing at close quarters the thought and actions of men of many different moulds. He read the very speeches of Demosthenes and the private letters of Cicero; he observed the results of their thought in action. These advantages which came from the old-fashioned intensive study of the ancient world we must in some degree reproduce in our study of the modern world if we are to get results of equal value. And we must realise in particular three main causes of the success of the old methods. The first of these was that the teacher was very commonly saturated with his subject. His knowledge was not a text-book knowledge. In the second place the study was intensive, and covered no very wide range. And in the third place, the study was pursued mainly in original materials. The student saw the Persian war through the eyes of Herodotus, who had lived through it, not through the eyes of the compiler of a nineteenth-century text-book, designed to get people through an examination.

The old scheme of studies is falling out of fashion. Quite rightly, as I think, we are realising that we must concentrate the minds of our pupils more directly on their own civilisation, and help them to understand it. But I do not think there is any getting away from the conclusion that, so far as concerns the use of history for the purpose of mental training, we shall not succeed unless we find a large place for the intensive study of a limited period under the direction of teachers intimately acquainted with it, and pursued largely by means of original and contemporary material.

This, then, is the conclusion at which we arrive from the consideration of history solely as an implement for the training of particular faculties. It is a conclusion which must radically affect our view of the content of the subject and of its methods. It will lead us to be entirely indifferent to the suggestion that this or that ought to be taught because every educated Englishman ought to know it. We shall be quite unperturbed if our pupil knows nothing about the tactics of Cressy and cannot enumerate the chief clauses of Magna Carta, provided only that he has really got inside some period, knows its leading personalities as living men, understands something of the way in which the problems by which they were faced appeared to them.

But we have next to turn to the other aim of historical teaching: that of affording the pupil a body of knowledge likely to be useful to him as a man and a citizen. From this point of view we may say that the main object of historical teaching is to make the world in which he lives intelligible to the pupil, to help him to understand the society to which he belongs and its relations with other communities. This, I think, is the aspect of historical teaching upon which we are to-day inclined to lay most stress, sometimes at the cost of disregarding altogether the element of pure intellectual training.

Now, when we come to consider what is the body of historical knowledge necessary to place an English citizen in an intelligible relation with the world in

which he lives, it is impossible not to be appalled by the vast range and complexity of the ground which ought to be covered.

In the first place, he ought to know the main features of the history of his own country. This obligation we all now accept. We try to meet it by means of outline text-books of English history.

In the second place we have recently come to believe that the student should understand something of the social organisation of his community, and to that end should study economic history as well as the political and military narrative of the older fashion. We have not yet worked this idea at all fully into our treatment. The economic aspect is still treated, in the text-books, and commonly also in the class-room, as a detached subject, which can reasonably be treated in little appendices; not as a vital and organic part of the main theme. Conscious of this, we have begun to produce supplementary series of text-books, which are additions to the main burden.

In the third place, as the outstanding fact of our country's position in the world is that she is the centre of a remarkable group of States in every stage of civilisation and with every type of political organisation, it is obviously desirable that the student should not only know something about the way in which this result has been achieved, but something also about the history and character of the great Colonies and Dominions. These themes are so great that we have almost omitted them from our treatment in despair. Yet they are not less important in themselves than the disputes of Becket and Henry II., or the medieval controversies of England and France which we insist that our boys shall study. And they are certainly far more necessary to be understood by the future citizens who will have a say in determining the destiny of this great group of States.

In the fourth place, Britain is a part of Europe, and British civilisation is only an aspect of general Western civilisation. What shall he know of England who only England knows? Our pupil must at the least be given something of the story of European civilisation as a whole. All the more because he lives in an island, he must be saved from insularity. Not his own nation only, but other nations as well, must become personalities to him; he must be taught to have some comprehension of their distinctive characters and achievements.

These are all platitudes. Yet what is the conclusion to which these platitudes seem to force us? It is that for the purpose of equipping the pupil with the historical knowledge necessary to help him to understand the society in which he lives, he must undertake a programme of most alarming range. He must study the history of England, economic and social, as well as political, and must bring it down effectively to his own days; otherwise his studies will be unrelated to the state of things they are supposed to explain. He must study the history of all the British Colonies and Dominions—each of them affording a subject of greater range and complexity than the whole story of ancient Greece. He must study the

whole history of Europe, more particularly in the modern age.

Now that would appear to be an altogether impossible programme. If it is to be achieved at all, it can only be achieved by the use of arid and desiccated summaries, from which, in the nature of things, all intimate and vital contact with personalities and their motives, and all that vivid detail of events which is the food of imagination, must necessarily be banished. It will be impossible for the teacher to speak from fulness of knowledge, except perhaps at one or two points. It will be impossible to pursue the study by means of contemporary material, or to see events through the eyes of the actors in them. At the most we shall have imposed upon us, as a concession to the demand for sources, some dreary collection of disconnected snippets, ranging over the centuries, and called a source-book. In short, almost all the intellectual value of historical training will be lost in the attempt to give the pupil the body of knowledge necessary for the interpretation of his world; and, at the end, as this body of knowledge will be divested of all vitality, and will be a mere collection of bloodless generalisations and formulæ, it will probably fail to achieve its purpose.

It is worth while to ask how far either or both of these main purposes of historical study are achieved by the ordinary curriculum of English secondary schools. What does the average intelligent boy know at the end of his school course?

He has in the first place studied the outlines of English history, as defined for the purposes of an examination. Very commonly this is all the history that he knows. Very commonly also his knowledge of it is of little value. For he seldom covers the whole ground in any adequate way. Often enough he knows little or nothing of the eighteenth and nineteenth centuries, and this means that such knowledge as he possesses is unrelated to the society which it is supposed to explain. He knows best certain traditionally emphasised facts about the medieval period, such as the battles of the Hundred Years' War and the conflicts between Crown and Church; and certain broad facts about the sixteenth and seventeenth centuries. But I imagine no one would maintain that he obtains any such first-hand contact with medieval civilisation as the old-fashioned schoolboy obtained with the civilisation of the ancient world. Henry II. and Edward I. are not real figures to him, as Pericles or Julius Cæsar often were to his predecessor. He has had no chance of looking at the society in which these statesmen lived through their own eyes. He has seldom any clear idea as to the way in which the industrial and democratic society in which he lives has developed out of the remote feudal order, about which he is told little save formulæ.

There are two main aspects of English history—two outstanding contributions which our schoolboy's race has made to the common stock of civilisation. The first of these is the development of the idea and machinery of self-government; the second the establishment of free communities in the most favourable regions of the world, and the bringing under European

tutelage and under the influence of Western civilisation of the bulk of the non-European world. These are the two great achievements which make English history worth studying, and which must be in some degree understood if the Englishman is to understand his place in the world. What does our schoolboy know of either?

In regard to the first—self-government—he knows only a number of antiquities; clauses of Magna Carta and the Petition of Right, the significance of which he misconceives; details about ministerial changes, and the provisions of franchise acts, and obscure and apparently trivial disputes about taxation, or the Cabinet system, or general warrants. He has seldom any inkling that self-government is a deeper thing than the mere regulations affecting parliamentary government, and that these themselves would have little significance if they did not spring from a widely diffused habit and instinct of self-government, which has shown itself through centuries in the management of local affairs, and in all kinds of voluntary associations for the co-operative control of common interests by discussion. I do not blame either the schoolboy or his teacher for this. Constitutional history is an extremely difficult theme, and the study of British institutions is more difficult than the study of any others, just because their spirit and essence are not to be found summarised in any convenient groups of clauses. The theme is, indeed, altogether too difficult and evasive for immature minds, and should be almost omitted from the school curriculum. For that reason it seems to me that the "getting up" of the chief clauses of the Constitutions of Clarendon, and so forth, is mere waste of time. It in no way helps the pupil to understand his world. It in no way helps to strengthen those mental faculties of which I have spoken.

When we turn to the other chief aspect of English history, the expansion of the British race with its ideas and institutions over the face of the globe, our report must be even more unsatisfactory. If I may judge from my own experience as an examiner, whether in modest secondary schools at the one end of the scale, or in the Oxford Honours school at the other end, British youth has no sort of knowledge or comprehension of even the main lines of British Imperial history. Ask an intelligent English youth when and how Britain became the paramount power in India: he will in nine cases out of ten make an airy allusion to Clive and Plassey, without realising that after Plassey the East India Company's influence was practically limited to Bengal, and even in that province was a mere curse, destined, as it would appear, to collapse through its own vices. He will look blank if you ask him whether Warren Hastings was not the true founder of the British power; he will be wholly ignorant of the work of Wellesley, and he will know nothing at all about the long struggle with the Mahrattas, which was, of course, the culminating fact in the establishment of British ascendancy. His ignorance will be found as great or greater in regard to the growth of the self-governing colonies. He is a citizen of the most extraordinary and complex

political fabric which has ever existed in history, and he is sent forth to play his part as a ruling citizen in this complex of States, knowing really nothing about its character or the way in which it came into existence.

Lastly, what does he know of the other nations of the world, amid which his own has to play its part? In some few cases he will have read a slight outline of European history, ranging from Babylon to Bismarck, in which Xerxes and Charlemagne, Mahomed and Luther, St. Bernard and Cavour, Bohemond and Mehmet Ali, St. Louis, William the Silent, and Voltaire, have all been dismissed in turn in a phrase or a sentence, and all reel together in a mad dance through his brain. His study of this fine confused mass will not have been wholly wasted. But he cannot have acquired any intimate contact with any single figure in this vast crowded panorama. And I doubt if he can have obtained any sense of what may be called the personality of the chief European nations, such as will help him to understand their aspirations and their actions in his own day. But even this slight survey—a good thing in its place, though with obvious limitations—only the few obtain. For the mass of our schoolboys the only chance of acquiring knowledge of the work and aims of other nations is when they play a definite part in British history. This is almost always in war; and it is scarcely too much to say that most of the youth of Britain have at school only heard of the other nations as enemies, usually as defeated enemies. It is not by such a treatment that comprehension is to be attained.

If this is a just survey of the kind of historical training which most British boys and girls obtain, and I do not think it is much exaggerated, it would appear that our existing methods do not in any real degree succeed in giving to our pupils the sort of knowledge that will be useful in explaining their own world to them. And it is quite certain that these wide surveys, lacking all intimacy of detail, studied altogether, or almost altogether, at second hand, and covering a range so wide that no teacher, however highly trained, can speak of them from close and first-hand knowledge, must altogether fail to achieve the intellectual results which, as we have seen, were often obtained from the old-fashioned classical training.

Is it possible by any means to achieve a better result? Can we, without demanding for history a larger share of school time than can reasonably be allowed to the subject, at once obtain the intimacy of detail that is only possible with a limited range, together with the explanation of the background of the pupil's own society, which seems to demand a very wide range of study?

I think it is possible. I think it can be done by making the story of British colonisation and other overseas activity the central theme of our treatment, instead of a mere unimportant appendix. I make no objection to general surveys of English or European history, if time can be found for them. But I should find the main substance of the historical curriculum

in the story of British expansion during the last four centuries, beginning in the Tudor period, when Wales was not yet fully incorporated with England, Ireland had still to be really conquered, and Scotland was as yet an independent realm. And I advocate this device not from any Jingo desire to strengthen Imperialist sentiment, but from the conviction that no other programme will equally well enable us to secure the ends that the teaching of history exists to serve.

In the first place, the theme is one of such keen narrative interest that it could without difficulty be made extremely attractive to young people. It has at once a broad unity, and a great variety. It ranges over the surface of the globe, and brings its student into acquaintance with civilisations of every type. It illustrates in every possible way the geographical basis of historical study. There is no room for doubt that in all these ways it could be made an extraordinarily useful means of stimulating the imagination and broadening the outlook of the pupil.

In the second place, the history of British colonial activity must form an invaluable introduction to the study of political institutions in their simplest form. It introduces the pupil to British self-government in what we may call a logical, rather than the traditional chronological, order. Self-government has been from the first the essential differentia between the colonial system of Britain and that of all other Powers. Its meaning and character are easily realised when the pupil is invited to observe groups of settlers planted in new lands thousands of miles from home, and to note how they instinctively organise themselves for the co-operative management of common affairs, how it appears to the authorities at home both natural and obvious that they should do so, how their devices for these purposes vary from case to case, according to circumstances, always flexible, never showing any rigid uniformity; and when the markedly different methods equally instinctively pursued by the overseas settlers of other countries are made clear to him, he will begin unconsciously to realise one of the most essential features of British civilisation with a clearness that will never result from the memorising of clauses of Magna Carta. At the end of his study he may be tempted to ask how this instinct and habit of self-government came to be so deeply rooted among the British people, and thus be led back to the difficult study of constitutional history with a new appreciation of its significance. But even if this does not happen, his study of Imperial history, if it is properly guided, must give him a deeper sense of what free institutions mean than any amount of the constitutional formulæ which he learns in his text-books of English history.

In the third place, the subject is capable of being studied with effect in contemporary narratives. There is, it is true, no single historian or chronicler who takes the place occupied by Herodotus or Livy in ancient history. But it should be easily possible to weave together out of Hakluyt and John Smith and the letters and biographies of statesmen, explorers, sailors, and soldiers, such a book as would be altogether different in character from the arid collections of snippets commonly called source-books; such a collec-

tion of linked and clear narratives as no man or boy could read without being enthralled. And the result would be, that a great historical process would be presented to the mind of the pupil in the very words of the actors in it. The thing is possible in such a field, where there is a clearly marked unity of purpose and interest, and where the range of time covered is comparatively limited. It is not possible over a range so wide as that of English history as a whole, when so many aspects, constitutional, political, theological, economic, must all be represented.

In the fourth place, the story of British overseas adventure would necessarily also be the story of British economic development. It would indeed be impossible to tell the story at all without showing, in a concrete and vivid way, how the economic condition of England has acted and reacted upon the state and conditions of her colonies. Every new development in British colonisation, every new growth of ideas in regard to colonies, is wrapped up with economic changes. British Imperial history is a magnifying mirror, in which British social history is reflected so clearly that its main features are unmistakable.

Lastly, I suggest that an intelligent study of British Imperial history affords an admirable means of making the student acquainted with the character and personality of other civilisations than his own—both European and non-European: a far more direct and effective means than is afforded by bloodless summaries of their long and variegated histories. During the last four centuries the process of expansion has brought the British race into contact and often into conflict with the Spaniard and the Portuguese, the Dutch and the French, the Russian and the German; the variegated races of India and Africa, and the ancient, stationary civilisation of China. The student who intelligently works through this story must end with a very fair grasp of the state of the world as it is to-day. No doubt his own country will stand out rather disproportionately in the foreground, but that is natural, and the disproportion will not be so great as that which results from a study limited to the history of England as it is ordinarily conceived. On the huge stage of world-adventure, the essential character of all the nations clearly displays itself, just as we have already seen that the essentials of British civilisation can be most clearly grasped outside of Britain. We have been not only the rivals of other nations in this field, but in a large degree the inheritors of their work; and our schoolboy and his teacher will find that they cannot fully appreciate the British aspect of the story without also learning to admire the heroism of Portuguese sailors, of Spanish *conquistadores*, of Dutch merchants and farmers, of French missionaries and explorers and diplomats. Albuquerque, Magellan, Cortez, Orellana, Père Marquette, La Salle, Dupleix, Tasman, Pieter Maritz, and a score of others must find their place in the great drama; and if it is reasonably well presented to him, the boy will emerge from his studies with a real respect for the work of other nations than his own, and with a dim but real idea of the difference between their national tempers and that of his own people.

EXAMINATIONS IN SECONDARY SCHOOLS.¹

Aim of the Examinations.—The first examination should test the efficiency of pupils in forms which are at about the standard appropriate to the age of 15½ years, and the second examination should provide a test of training above the present matriculation standard. The attention of examining bodies and examiners should be concentrated on testing the efficiency of the pupils and the detailed methods of instruction. No verdict can be pronounced upon the general efficiency of the school without a knowledge of the character of the heredity and environment with which it has to deal. Still less can the efficiency of the teacher be judged fairly from examination results. The position of the schools on the efficient list, whether with or without recognition for grant, should be determined by the results of inspection.

The Guild Council has received the assurance of the Board that recognition of schools will continue to depend on the reports of inspection, and trusts that the inspectors' estimates will not be influenced unduly by the results of the examinations.

Incidence and Accessibility of the Examinations.—The full development of the scheme seems to depend on an understanding that nearly all efficient schools should submit at least one class annually for examination. The Board should be prepared to grant exemption in special cases. The examination should be optional for schools not receiving grants. The proposal, "The form and not the pupil will be the unit for examination," must be interpreted with latitude. The Guild Council believes that schools will be willing to aim at sending in complete forms; but some experience of actual working should precede such a rule. Inspectors could inquire into reasons for non-compliance, which might be quite wise in particular cases.

It is desirable that the examinations should be accessible to all candidates under nineteen years of age.

According to the interpretation of the Guild Council, the proposals of the Board will not compel any school to be examined which is not already under such compulsion; any proposal to the contrary would be opposed to the principle that schools may be recognised as efficient, after inspection, without examination. This principle is vital to the maintenance of the healthy national ideal of freedom and initiative in education.

Subjects and Methods of the Examinations.—The proposal that candidates should be examined in (i) English subjects; (ii) at least one foreign language; (iii) a science subject, which may be mathematics, is a sound one. It is hoped that the Board will grant exemption from a foreign language only in cases where the schools provide a really strong course in English literature, in general history, and in art. Although the Guild Council would not require that the candidates should pass in both science and mathematics, both are necessary in a normal curriculum;

the study of both should be insisted upon, with an adequate provision therefor in the time-table. The Board will not allow any school recognised for grants to modify its organisation or curriculum for the purpose of preparing pupils for an unapproved examination. The Guild Council recommends that the Board does not approve any examination which requires schools to modify an organisation and curriculum which the Board has accepted as suitable.

The position of the fourth group of subjects is insufficiently protected. The Guild Council recognises as highly valuable the encouragement which the Board has given to educational development in the direction of these subjects, but considers that such development can proceed much further with advantage to national efficiency. What may be termed "Group IV. subjects"—music, art, manual work, housecraft, and physical training—cannot safely be kept in an inferior position as merely ancillary to the general course.

It may be advisable to grant the certificate for a reasonable attainment in any three of the four main groups. But in all cases the examination should include all the groups (i), (ii), and (iii).

The principle that examinations must follow the curricula, and not *vice versa*, is cardinal and essential. It is of great importance that question-papers should be adjusted carefully to school syllabuses, a task which is quite within the powers of a competent staff of examiners. Schools should submit their own syllabuses. There appears to be a fear on the part of the Board, which the Guild Council does not share, that the inspection of syllabuses and framing of question-papers would necessitate an inordinately large staff of examiners working for a long time. Against this it must be pointed out that examinations have been conducted by the University of London and by local authorities on the principle now advocated, and that experience has shown that syllabuses fall readily into groups.

System of Marking and Reporting Results.—The examinations should not be competitive. The published list should state which candidates have passed with credit, and which have attained a simple pass. In addition, the schools should be informed which of their candidates have passed with credit, simply passed, failed, or failed badly, in each subject. This classification into four grades would meet those requirements which the Guild Council regards as legitimate.

Standards and Rewards; Admission to Professional Training.—The tests should combine variety with equivalence. The recognition of two standards, the simple pass and the pass with credit, in the first examination, is sound in principle. The "Credit" certificate should be accepted unequivocally as a token of such educability as to qualify for a specialised professional training. Apart from the Navy, no better foundation for a professional course can be postulated than an intelligent study of the main groups of subjects required by the Board's scheme, and the possession of the "Credit" certificate should exempt from educational tests for admission to the universities or to professional training. The conditions on which a

¹ Abridged from a memorandum of the Teachers' Guild Council on the Board of Education Circular 849.

simple pass certificate may be accepted for entrance to the lower grades of professional training may well be a matter for negotiation between the Board and its Advisory Committee (Examinations Council), on one hand, and the Professional Councils on the other. The whole scheme of the Board will fail unless the certificates be accepted as guarantees of general education precedent to professional training. The Board of Education should accept the "Credit" certificate as exempting intending teachers from matriculation or the Preliminary Certificate examination.

The Second Examination.—The Board's proposals for the second examination afford an outline which is quite satisfactory in principle, allowing considerable latitude in choice of studies, and permitting that modified specialisation which is the only specialisation permissible in schools—viz., the intensified study of one main branch of the curriculum, but not to the exclusion of every other branch. It may be added that such modified specialisation is often desirable on purely educational grounds. It is doubtful whether the mere award of a certificate would justify national expenditure on the examination; the passing of the examination should carry with it an advantage in the university or institution of higher professional training.

Prohibition of Lower Examinations.—The Board will prohibit any grant-earning school from taking the Preliminary Examination of the Oxford Delegacy or Cambridge Syndicate. This step is welcomed by the Guild Council. Further, the Board will reserve the right to prohibit any such school from taking the Junior Examinations of the university examining bodies. The policy thus adumbrated is of serious importance. The Guild Council is in firm agreement with the Board's view that secondary education, to be thoroughly efficient, implies a course of study pursued to the age of sixteen and beyond; but the opinions of the Board, backed as they have been by teachers, have not prevented the withdrawal of pupils before the sixteenth year had been completed. The reasons for such withdrawals have been partly, perhaps mainly, economic.

The training and interests of the majority of boys and girls must not be sacrificed for the sake of the minority who are destined for the professions. Average boys and girls should be able to obtain a certificate on leaving school; there is risk to secondary education if employers are unable to obtain such evidence of school training. The retention of the junior examinations, in addition to the first examination, would prolong the undue multiplicity of examinations under which schools at present labour, which multiplicity the Consultative Committee rightly wished to extinguish. The suggestions of the Guild Council may be stated approximately thus:—(1) A "Pass" Certificate, satisfying the reasonable demands of commercial and other employers for evidence that a secondary-school course has been followed with reasonable industry and intelligence; (2) a "Credit" Certificate, which should be an educational qualification for entrance to a pass-degree course at a university and to many professional courses; (3) a "Second Examination" Certificate, pos-

sibly carrying special awards, but in any case admitting to honours courses at a university and to professional courses.

Relations between Inspectors, Examiners, and Teachers.—The Guild Council welcomes the proposals of the Board, and desires that they should *all* be made operative. Teachers should be represented on the examining body, and arrangements to suit the geographical or other special conditions should be made for bringing examiners and teachers into touch. Considerable value should attach to the school record and to the headmaster's assessment of the relative merits of candidates. The latter provision will raise the trustworthiness of the examination. The headmaster's name should appear as one of the signatures on the certificate.

The Guild Council also welcomes the close co-operation of H.M. inspectors with examining bodies and the co-ordinating board. The attitude must be one of co-operation, not of control. If Government control is carried into details and methods of instruction, spheres hitherto rightly reserved in secondary schools to the teachers, there is a danger of lowering the professional tone of the teacher, and of deteriorating national ideals by influencing the teachers, and thus their pupils, towards bureaucracy instead of towards independence of character.

It is recommended that at least one of the senior examiners should accompany the inspector on his visits to the school, (1) prior to deciding the question-papers for the examination, and also (2) after the examination.

Governance.—It is proposed that the Board of Education shall supervise the scheme and co-ordinate the work of the examining bodies, exercising these functions after report from, and with the assistance of, an advisory committee. The Guild Council recommends that the title be changed from advisory committee to examinations council, and that this council be in direct communication with the examining bodies. The Board "will hear complaints with regard to the standards of examination." This implies the supervision of question-papers—a weapon of great power, which should not be wielded without the assistance of persons responsible to the teaching profession.

OXFORD LOCAL EXAMINATIONS, JULY, 1915.

HINTS FROM THE EXAMINERS' REPORTS.

SENIOR.—The examiners in *Arithmetic* report that weakness was most noticeable in questions involving percentage. This weakness appeared to be due to carelessness rather than to ignorance. Confusion of square and cubic measures and premature approximation were fruitful sources of error. The following statistics as to the methods adopted in working out the cost of 15 cwt. 3 qr. 16 lb. at £3 12s. 4d. per cwt. may be of interest to teachers. The figures are founded on the answers in three separate blocks of 100 consecutive papers. In each block the proportions varied little from the final result.

1. Worked by ordinary practice ...	74½ %
2. Money and weight reduced to vulgar fractions and multiplied ...	14½ %
3. Money decimalised, then by practice	11½ %

100

Percentage of correct answers by method	1	86
" " " by method	2	58
" " " by method	2	29
		75

These figures confirm the general impression received, viz., that practice is not only the most popular method, but that it is also the one in which there is least chance of error in calculation.

Reporting on the work in *Composition*, the examiners state that there is room for improvement in the spelling of some, in the punctuation of many, candidates. In a few cases the value of really good work was reduced by excessive length; on the other hand, some essays, good so far as they went, were too short. An essay should not be a mere hasty fragment. The paraphrase, seemingly easy, was in reality not free from difficulty, and the historical event referred to was unperceived by a surprisingly large number of candidates. A few verbal changes do not constitute a paraphrase. The direction as to the length of the paragraphs should be complied with. Many paragraphs were twice the prescribed number of lines.

In *General Literature* a considerable proportion of the candidates were quite unfit to attempt the paper, and obtained very low marks. Other failures were due (1) to ignorance of the passages to be identified in the first question (though these included quotations from "Lycidas," "Locksley Hall," and other familiar pieces), and (2) to ignoring the instructions in one of the two alternative questions on Shakespeare. The large majority of candidates chose the alternative which asked for a description of two specified scenes in Shakespeare's plays and for some account of the chief characters who take part in them. Most candidates omitted to answer the second part of the question. There was also a tendency to select difficult questions such as that on the essentials of a novel, which many candidates did not even understand. There was some irrelevance, and there were indications of "cramming."

The examiners of the paper on Shakespeare's "Macbeth" direct special attention to the context question. Both context and explanation are very inadequately given as a rule, and explanation is specially faulty—a paraphrase of the meaning very often takes the place of detailed explanation of special difficulties. It leads to serious loss of marks even by candidates who otherwise do well. More attention should be given to correct spelling—errors abound—and the writing is sometimes difficult to read. Many answers are marred by diffuseness and unnecessary detail. Questions involving comparison or discussion, while fully answered so far as subject-matter is concerned, often lack the essential element for a really good result.

The general character of the work in *English*

submitted was scarcely up to the usual standard. Many candidates failed to write down a correct noun or adverbial clause, and a considerable number confused suffixes with prefixes. The parsing was fairly well done, though the distinction between gerunds and participles was not always accurately made. The sentences given for criticism were intelligently dealt with, and the difficulties of English spelling were adequately illustrated, though with little knowledge of their historical causes.

The examiners in *French* state that it was difficult to detect any general improvement except that the proportion of absolute failures was appreciably smaller than usual. The free composition was better than the translation into French, and generally more correct as regards grammar. The answers to the grammar questions were exceedingly poor; the question on prepositions in particular produced nothing but guess-work. The general sense of the passages was made out by most candidates, but the majority were very unsuccessful with the more idiomatic French sentences and phrases. Another weakness is the failure to look at the English rendering as a whole and consider whether it makes sense. Many candidates need to be taught that the right choice of words is the first thing needful in translating.

There is nothing in this year's work in *Geometry* to distinguish it from that of other years. Points in which pupils appear to need instruction are a clear comprehension of the conditions under which two triangles are congruent and an accurate idea of the meaning of the theorems concerning "greater sides opposite greater angles." Pupils should be shown by figures not merely when these theorems can be applied but also when they cannot. It is again necessary to point out that pupils should be made to take the same amount of extra trouble necessary to include all possible cases of theorems; usually they draw a figure which is applicable to one case only. Also small details of construction should be insisted upon. When carelessness of detail and slovenliness of expression are permitted, the subject of quality loses most of its educational value.

Errors and omissions in *Algebra* were often due to want of thought. For example, the first part of one question asked for a proof of a formula used in arithmetical progressions, and many candidates employed the same formula in the second part of the question to find the sum of a series which was obviously geometrical. Nearly all the candidates appeared to be familiar with the use of logarithms, but most of them merely stated the rule instead of giving their reasons for fixing the characteristic of a logarithm. Again, many students had so constantly used tables of anti-logarithms that they failed to notice that the extract from a table of logarithms supplied with the questions could also be used to find a required anti-logarithm. Equations and problems were solved correctly, but often mechanically; and there was much confusion between the lengths of the sides of a rectangle and the number of hurdles required to fence it. In all these cases a little more thought would have produced far more valuable work.

The most conspicuous fault in *Trigonometry* was the use of needlessly complicated formulæ: simple formulæ were proved by more advanced ones, while problems which could be solved in a few lines by the immediate use of tables or the application of the simplest expression for the area of a triangle were often attempted by formulæ which are suited to comparatively long logarithmic calculations. In attempting the graph question candidates failed to put the graduations, and very few used their graphs to read off required results. Logarithms were more freely used, sometimes needlessly, as, for example, to multiply a simple number by four. The proof that the sines of the angles of any triangle are proportional to the opposite sides was generally given for an acute-angled triangle only. Very little accurate work was done on the question which required knowledge of the signs of the sines of angles in different quadrants.

The general standard of the work in *Theoretical Chemistry* seemed not quite so good as in the previous year. Failure in attacking a volumetric problem on the combustion of gases showed that a large number of candidates were imperfectly acquainted with the principles of Avogadro and Gay-Lussac. There were also many faults in the treatment of electrolysis. Other points noted were:—(1) Looseness in the use of chemical terms, such a "combustible"; (2) confusion due to speaking of special reagents by names which give no clue to their composition.

JUNIOR.—In the *Arithmetic* answers, there was little evidence of attempts to check results obtained, and answers obviously incorrect were frequently given when a little consideration would have led to the detection of the error which was the cause of the inaccuracy. In one question the contracted method of division would have saved considerable labour, but it was very seldom applied in an intelligent way. In the simplification of a fraction the result should have been 1, but fully 25 per cent. of the candidates at some centres gave this answer as zero. In fact, the idea that the quotient obtained when a number is divided by itself is zero seemed to be very common. The finding of the simple interest on a sum of money for a number of days, instead of years, proved troublesome to many and, surprising as it may seem, there are numerous candidates who do not know how many days there are in a year.

In the answers to the questions on certain *works of Sir Walter Scott*, there has been an extraordinary amount of irrelevance. The stories, especially "Rob Roy," appear to have been read very unintelligently; the incidents are not fitted into the plot, and are consequently misplaced. Confusion between "the Fifteen" and "the Forty-five" was almost universal. I have never seen so much bad spelling.

The "context" question in the paper on *Milton's works* did not produce very satisfactory answers, points obviously calling for an explanation being generally ignored. There were some extremely bad cases of irrelevancy, some answers being scarcely at all on the question asked. In some cases, no doubt, this is due to the candidate's desire to avoid the confession

of ignorance which is involved in leaving a blank, but in other cases it is clearly the result of a failure to grasp the intention of a question. In other cases, again, it appears to be due to a determination to make use of knowledge whether it is called for in the paper or not. There was a good deal of misspelling: the frequent persistent misspelling of words printed on the paper is surely inexcusable.

The weakest point in the *Geography* papers was in drawing simple conclusions from accurately stated facts. This was specially noticeable in the answers to the question on river deltas, which were often confused, although containing good matter.

Defects which were generally noticeable in the answers on *French Grammar* were the misuse of accents and ignorance of the genders of many words of everyday life.

The majority of the candidates taking *German* showed themselves well acquainted with the use of conjunctions and the forms of strong verbs. But great inaccuracy was noticeable in regard to the use of articles, separable and inseparable prefixes, and, most of all, the order of words in German sentences.

The standard of *geometrical ability* shown by the candidates was much the same as in recent years. There is still room for great improvement. The geometrical drawing, on the other hand, was so well done as to lead one to suppose that mere manual dexterity has been cultivated at the expense of reasoning power. The usual mistakes concerning congruence of triangles are still common; especially the statement that two triangles are congruent if the three corresponding angles are equal, or if two sides and the non-included angle are equal. Colloquialisms were prevalent throughout the answers.

In *Elementary Algebra* a lack of accuracy was shown in many ways:—Brackets were often omitted as if they were quite meaningless and unnecessary; a factor common to both sides of an equation was ignored and treated as redundant; negative quantities were treated as positive, if it seemed more convenient to deal with them as such. Candidates should know that $\sqrt{-a}$ is not the same as \sqrt{a} ; and that such an algebraical symbol as x can only denote a number; so that it is misleading to say, e.g., "Let x be the cost or sale price, or distance," etc.

The answers in *Theoretical Chemistry* on the whole showed satisfactory work. It is apparent that more attention should be given to training candidates to describe accurately the results both of their own experiments and of those which they have seen done. In many cases the candidate, although perfectly acquainted with the chemistry of a reaction, was quite unfamiliar with the appearance of the actual experiment.

The answers in *Mechanics and Hydrostatics* revealed that while the experimental proof of the theorem of the parallelogram of forces could, in most cases, be satisfactorily given, and the principle of Archimedes correctly quoted, yet the applications of the principles seemed known to only a few. More practice is clearly needed in the solution of such problems.

THE UPLANDS SUMMER SCHOOL.

THE Uplands Summer School was held for the first time during three weeks of August at Glastonbury, in Somerset. In the prospectus its purpose was described as an "effort to bring together teachers engaged in many fields who have common interests in the study of educational principles and the reform of school teaching. There are not a few summer schools doing useful work; but there seems to be a need for a meeting ground for those whose interests are not limited to any special line of work, but are anxious to come into practical relations with those large fundamental ideas that are shifting our educational operations to a new base." This purpose has been achieved. About ninety students entered their names, but some twenty were compelled to withdraw owing to the claims of duties arising out of the war. Teachers from many fields of work were represented; kindergarten teachers were perhaps the most numerous, but lecturers in training colleges and principals of private schools also made a good showing. As the school opened on August 7th, teachers in primary schools were scarcely represented at all, since the majority of city schools resume work in August.

The work of the school was roughly divided into two parts: the mornings were allotted chiefly to the study of educational principles, conducted partly by lecturers, partly by discussions, partly by a series of demonstration lessons to school children. Prof. Findlay, of Manchester, and Prof. Shelley, of Southampton, undertook most of this work, but a short course by Mr. S. F. Jackson, of the Sunderland Training College, on "Problems in Modern Psychology" proved useful. Two lectures each were given by the Rev. J. H. Powell on anthropology, with special reference to the lake dwellings and other remains in the neighbourhood of Glastonbury, and by Miss A. Buckton on folk drama.

The afternoons were assigned to practical work, a choice being offered from various occupations. These from one point or another illustrated principles of education which occupied the morning hours. Miss E. C. Pugh took one group of students in nature-study, and Miss F. Wood designed a course on "The Education of the Girl." The most popular course was one on "Play Production in Schools," conducted by Mr. Shelley. Music also received attention, not only in meetings for singing and folk dancing arranged on various evenings by the students, but in the classes for Dalcroze eurhythmics, conducted by Miss E. Findlay. The students conducted three conferences in addition to the programme, one on the musical training of young children, a second on the teaching of history, with special reference to the use of local materials, and a third on practical problems of method in training colleges.

The outcome of the summer school was the formation of the Uplands Association. The committee appointed to manage it will arrange for the Uplands Summer School, 1916; issue three times a year a *Circular* as the organ of communication between the members; and "publish from time to time statements of those principles of reform which appear to be distinctive of the present epoch." A first draft of such

principles was drawn up and circulated to the members before the meeting closed. One or two circles for mutual study were arranged so that teachers who have time at their disposal may keep in touch with each other's work throughout the year. The members of the association also hope, as soon as funds permit, to set on foot a school in close connection with the association and bearing its name. Provision is being made to unite parents with teachers in future meetings. It is hoped to hold the next summer school in a locality where families can be accommodated easily in seaside lodgings. Further information may be obtained from the secretaries of the Uplands Association, 25 Andover Road, Southsea, Hants.

WOMEN TEACHERS IN THE UNITED STATES.

THE intense interest which centres upon all matters pertaining to the child is manifested in the United States by an inquiry, "Shall biological failures be our teachers?" published in *School and Society* for August 28th. Four out of every five teachers of American children are women. It is possible for a child to spend twelve years of his elementary and high school education without coming into contact with a single man teacher. The leading characteristic of the teachers, second only to the fact that they are women, is that they are unmarried. This quality of spinsterhood is not only a characteristic, but a required characteristic, of the teachers. Can this attitude be justified? "Mother love" is created in order that children may be cared for, and "mother insight" is intended to be utilised in the education of children. This is readily admitted when stated in the abstract, but it has not yet been realised in the concrete. Modern education insists that the task of the school is to teach life to the growing individual, to understand the child quite as much as subjects of the curriculum. But who will do this? Those who are expected to do this usually belong to one of two groups: either they are young unmarried women, and hence necessarily possessed of but a limited amount of education, training, and teaching experience; or they are older unmarried women, lacking in that appreciation of life which comes from marriage and parenthood. The superintendent must either employ the young teacher with insufficient experience, or the older teacher with the seriously limited human development.

Having stated this dilemma, Mr. H. P. Patterson continues his inquiry. Every third man and every second woman engaged in teaching is under twenty-four years of age; 50 per cent. of the entire teaching population have had four or fewer years' experience, and 25 per cent. have had only one year's experience. Are we to allow our children to be trained by these young women, who are poorly prepared for their important work? The alternative, however, has its difficulties. If young, inexperienced teachers are not to be employed, then must our teachers be the biological failures of society. There is no escape from this dilemma, unless we employ mothers as teachers. Statistics show clearly that the great mass of

American women marry. If teachers are not allowed to marry, if they are prevented from realising the ideal of womanhood and motherhood which Nature has planted within them, then must the teaching force be selected from those who biologically have been rejected. Our body of teachers is not representative of society at large. We need many more good fathers and mothers among those who are shaping the lives of our children in the school. There are administrative problems, yet the mechanics of education must be kept subservient to its ideals. The one main issue must first be decided: Shall our children receive their educational inheritance from humanity's representative men and women, or shall biological failures be our teachers? In Britain, the situation is not so dire as is depicted in this statement of the American conditions, yet many education authorities should revise their tenets in the light of American experience.

HISTORY AND CURRENT EVENTS.

EVER since in prehistoric ages the level of the sea rose in the East Atlantic, Great Britain and Ireland have been islands. The salt water which has surrounded them, though comparatively shallow, has been deep enough to affect their whole history. While warfare was confined to the level of sea and land, we were satisfied that "Britannia ruled the waves," and that since the early middle ages the islands have been safe from invasion while England remained "true to herself." But now, in this war which has seen so many innovations, the belligerents have dived below the level of the sea and have soared above the level of both land and sea. We in London have been reminded of 1667, when the Dutch reached the mouth of the Medway, and the enemy has succeeded in causing destruction in parts of London as well as in other towns on and near the east coast. We are spared the fulness of the horrors to which Belgium, France, and Poland have been subjected, but we are led to doubt how far we may regard our country as in the old full sense—an island protected by "the inviolate sea."

BUT as yet, in spite of "air raids," life in England continues in many ways "as usual." Archæologists still pursue their peaceful inquiries, and at Canterbury they have been discovering the positions of the original tombs of St. Augustine, King Ethelbert and his wife Bertha, as well as the original tombs of three of St. Augustine's successors in the archbishopric. To those who have the opportunity of visiting the cathedral, these recent discoveries must help in the realisation of our ancient history. St. Augustine and his less well-known successors were instrumental in restoring England to the European world from which the "Anglo-Saxon" invasion had cut her off, a work which the Norman conquest and the Angevin dynasty still further forwarded. England, and later Great Britain, has always formed part of Europe, and her insularity has but helped her to take the position she holds to-day—that of a champion of Europe, and in especial of the weaker countries against whoever would make it and them the subject of a tyranny.

THE hall which was erected in Whitechapel, London, some thirty years ago to commemorate and organise the work achieved by Arnold Toynbee, has done a good work. But those of us who have known something of its activities have felt that it was somewhat misplaced, and that it did not affect so much the population in the midst of which it was located, as those many middle-class people who found its classes for instruction easily reached by train or omnibus, and its arrangements for travel suited to their pockets and convenience. Now, even the population and neighbourhood have changed, the "city" has grown eastward, warehouses have taken the place of dwelling-houses, and those which remain are tenanted almost exclusively by Jews of various kinds, who are not affected by Toynbee Hall, and who are cared for by their own people. So the Hall is to be moved to Poplar, where the population is still preponderantly non-Jewish, and sufficiently poor to require the social service offered by the Toynbeecites. Do our readers know which districts of East London are practically Jewish towns, which not?

MANY years ago two essays were written in a university competition on the subject of "Christianity and War." One of them traced the course of opinion among Christians of various kinds as to the lawfulness of warfare; the other had for its subject the modifications in warfare which had been effected by Christian opinion. The present war has furnished events which have reminded us of these two essays. Europe is a nominally Christian world; has its Christianity done anything to prevent the outbreak of this latest evolution of scientific invention applied to destruction? What it has attempted has so far been without success. Is there such a thing as international law? A law, that is, which absolutely binds each belligerent and prevents breach of treaties and agreements. The Pope, as head of the largest Christian community in the world, has played the part which might be expected from one in his position. He has attempted to bring about peace, he has made proposals for the better treatment of wounded prisoners. In the first he has not been successful, in the second he has obtained a small measure of success. These things lead to reflections which we must leave our readers to make for themselves.

ITEMS OF INTEREST.

GENERAL.

THE Board of Education announces that the "Regulations and Syllabuses" which governed the examinations in science and technology held in 1915 will continue in force for 1916. In the prefatory note to the "Regulations and Syllabuses for Examinations in Science and Technology, 1915," the Board announced the intention to discontinue those examinations at a date to be announced subsequently. The Board now gives notice that after 1916 Lower General Examinations in any subjects of science and technology will no longer be held. The Higher General Examinations will for the present be continued. The

conditions governing the award of scholarships, exhibitions, etc., in science in 1917 will be announced in due course.

SPECIAL prospectuses of courses in history and in phonetics at University College, Gower Street, London, have been issued, and contain full particulars of lectures and classes arranged for the coming session. A public introductory lecture by Prof. A. F. Pollard, on "The War and the British Realms," will be delivered on October 4th, at 5.30 p.m. A public introductory lecture by Prof. L. W. Lyde, on "Racial Frontiers in Central and South-Eastern Europe," will be given on October 11th, at 3 p.m. Ten public lectures by Prof. A. F. Pollard, on "The Progress of the War," will be given on Thursdays, commencing October 14th, at 5.30 p.m. These lectures are open to the public without fee, but application for tickets must be addressed to the secretary of University College, and must be accompanied by a stamped addressed envelope.

At the beginning of each school year the Historical Association issues a revised edition of its leaflet containing a summary of the historical syllabuses of the examinations commonly taken by pupils attending secondary schools ("Examinations in History," Leaflet No. 3, revised September, 1915). Since examination syllabuses play a dominant part in determining the curricula in most of our educational establishments, it is interesting to have brought together in a single document a fairly complete collection of the authoritative demands of the leading examining bodies. The leaflet classifies the examinations according to the ages of the pupils for whom they are primarily intended. First come those three deplorable examinations—the "Preliminaries" of Oxford, Cambridge, and the College of Preceptors—the victims of which are under fourteen years of age. Next follow the more defensible "Juniors" designed for young people between fourteen and sixteen. Thirdly, there are the various "Seniors" and university matriculation examinations. Finally, the University Scholarship tests are enumerated.

A comparison of the requirements of the diverse examining bodies reveals the following results. (1) In English history, Oxford University still leans to the intensive study of short selected special periods; the modern universities prefer the study of general outlines, while Cambridge endeavours (with doubtful success) to set papers which allow either of the two principles to be pursued. (2) The British Empire, in spite of all the agitations of the past ten years, can be taken as a specific subject in only three out of the fifty examinations reviewed, viz., the Cambridge Junior and Senior, and the Oxford Higher Local. (3) General European history is represented in the syllabuses of the Oxford Junior and the Cambridge Higher Local, as well as in all the Scholarship Examinations of the older universities. (4) The history of the nineteenth century figures this year prominently in no fewer than six syllabuses, probably as a result of the Circular issued by the Board of Education shortly after the outbreak of the war. The general

impression which one gets from a perusal of this leaflet is that of the lack of system and organisation in English education. Probably that will now be regarded as a virtue, since it furnishes a point of contrast between England and Germany.

In his paper, "Ideals of Life and Education," at the August conference on New Ideals in Education, held at Stratford-on-Avon, Mr. E. G. A. Holmes laid a strong indictment on German education as a preparation for citizenship. In Germany the pressure of autocratic authority on life was constant and strong . . . the pressure which deadens moral sensibility, makes for callousness in the weaker natures, for brutality in the stronger. Hence the savagery of over-disciplined Germany in the field and her criminality at home. . . . Crimes of temper, malicious wounding, and malicious damage to property are 120 times as numerous in Germany as in England. Crimes of shame, as the Germans call them, are more than forty times as numerous. In 1912, German boys between twelve and eighteen committed more murders and manslaughter than did all the inhabitants of this country, more than seven times as many crimes of temper, more than four times as many crimes of shame. These figures, which make it impossible for us to reject on *a priori* grounds the stories of German atrocities in France, Belgium, and elsewhere, need something more than the deadening of moral sensibility to account for them; and other causes will in due course be forthcoming. The deadening of moral sensibility makes for automatism in the lower levels of intelligence, for pedantry in the higher. The traditional ideal of education may be set forth in the homely words, "Do what I tell you," and this ideal Germany has adopted as her ideal of life.

FROM *School and Society* for August 7th, 1915, we learn that the cost of higher education in the United States is increasing. Almost every large university in America has raised its tuition charges within the last five years; for example, the charges for tuition at Harvard were 33½ per cent. higher in 1915 than in 1910, at Princeton and Cornell the increases were 9 and 25 per cent. respectively. "The reasons set forth most frequently are that the cost of higher education must be made to keep up with the increased cost of living; that the wisdom of paying salaries more nearly equal to what the earning capacity of the professors would be in other lines of endeavour is becoming more apparent; that at best the student is but a beneficiary, and it is only logical that he should bear a greater share of the burden."

MAJOR LYONS, the President of the Geographical Section of the British Association, devoted his address to the importance of geographical research. Research in geography is not being undertaken to any great extent, and in this respect the science falls behind geology and botany. A geographical student is apt to assimilate "a masterly account of the geographical controls and responses involved, and may fail to recognise that geographical descriptions, even though technically phrased, are not the equivalent of original quantitative investigation, either for his own educa-

tion or as a contribution to the subject." One cause of this lack of research lies in the dearth of material in all branches of the science; purely descriptive accounts of various areas and phenomena are numerous, but the trained student usually finds that the data for a scientific study are not available; hence the over-emphasis which attaches to descriptive geography. In all departments of geography it is rare to find a serious discussion of the accuracy or the trustworthiness of the evidence, and yet no scientific contribution can be considered complete without such a discussion.

MAJOR LYONS dealt very extensively with the possibilities of research in mathematical geography and cartography. It is essential in regard to all measurements concerning place and direction that the quality of the instruments should be determined and that the accuracy of the computed results should be specified, otherwise comparison between the records of one traveller and those of another is a matter of some degree of guess-work. In cartography there is need for trained map compilers, who will supply the draughtsman with the material for the map arranged in accordance with scientific principles and selected with a definite degree of precision. "The compilation of a glossary of geographical terms has been in progress in this country for many years without having reached finality," and there is great scope for the work of research students who will find the precise need for geographical terms, and whose systematic investigations will eventually supply geography with the exact terminology which the science, at present, does not possess.

THE *Madras Christian College Magazine* for July contains some interesting revelations concerning the effect in Madras State of substituting a Secondary School Leaving Certificate for a Matriculation Examination as a stepping-stone to the university. The change occurred in 1911, and immediately the number of students in the first year university classes of the affiliated colleges was more than doubled. The numbers in 1910, the last year of the Matriculation Examination, and in 1914-15 were 1285 and 4120 respectively. The Sixth Forms of the secondary schools have been depleted, the colleges are overcrowded, and the presence of unfit students reduces the efficiency of the work of the colleges. The number of candidates for the First University Examination in Arts has considerably increased, although the number of successful candidates shows no sign of increase at all. A committee of inquiry has suggested the adoption of university regulations which will practically reintroduce a kind of Matriculation examination. The writer of the article, the Rev. E. M. Macphail, remarks: "Students in India hardly ever believe that they fail owing to their being unfit to pass."

THE September issue of *The Child* contains a description of the Worcester Residential Open-Air School, situated on the hillside at West Malvern. The school is open from April to October, and accommodates forty-six children and six adults. The buildings cost £37 per child's place, and the upkeep does not exceed 15s.

per head per week, roughly half of which is obtained from Board of Education grants and the remainder from the local education authority. Part of this maintenance cost is due to the repayment of interest upon capital expended at 5 per cent., and the establishment of a sinking fund at 4 per cent., so that a publicly maintained school could be maintained more cheaply, especially when prices are not high, as at present. There are many interesting photographic illustrations, which are also a feature of an article describing "The Caldecott Community," established in St. Pancras. Here there are fifty-seven children between the ages of three and seven, the community is full, and there is a waiting list. The children may attend from 9 a.m. until 6.30 p.m., and during this time they are almost entirely free to educate themselves. Some children may go home to dinner and also at 3.30, but this is not essential. In addition, there is a mother's club from 8.30 to 10 p.m. Both these educational experiments, one in the city, the other in the country, seem to foreshadow important developments in connection with the promotion of the welfare of the child.

MR. S. P. B. MAIS contributes to *The School Guardian* for September 18 an interesting article on the O.T.C. in a public school as it has been invigorated by the war. "In old days any excuse to get off parade was seized, but now the boy who wishes to escape a drill is not to be found; the trouble is rather to keep him back when he has a severe attack of influenza from taking part in night operations when it is snowing or a biting east wind threatens to penetrate the most military of waistcoats." But those who doubt that the O.T.C. produces any other than military benefits should read Mr. Mais's opinion that bloodshed and war are absolutely repugnant to the boy-mind. "It is one thing to be an ardent signaller or bugler, and quite another to want to kill a fellow-creature; it is one thing to play hide-and-seek in the dark on a wintry night in a blizzard, but quite another to want to kill your antagonist if he falls into your hands."

"WHAT, then, is education? In its essentials it is the creation of an attitude of mind which is characterised by fairness, openness, and willingness both to receive and to undertake the search for the truth. This means the possession of standards by which to judge the truth, a disciplined mind, acquired knowledge, and a power of adapting and being adapted to the community in which we live; and to it all must be added the salt of determination. It is not alone the epitome of all the processes adopted by a society for realising the ideals approved by the race, but it is as well the desire for discovery and the intent of adding to the world's store of knowledge, which leads to the discarding of the unessential whenever this leads to better ways. This means a spirit of tolerance and breadth of view, and readiness to accept with cheerfulness the duty of the day whether it be work with hands or brain." This is an American view put forth in a "commencement address" by Mr. F. L. McVey, of the University of North Dakota, and printed in *School and Society*

for September 4. Mr. McVey decided that the elements, practically stated, that constitute education may be summarised as follows: "(1) The right attitude towards facts, (2) appreciation and sympathy, (3) imagination, (4) leadership, (5) the spirit of service."

SCOTTISH.

THE scarcity of teachers which has been troubling the English education authorities for some time past is now making itself felt in Scotland. The male junior student has practically disappeared in many schools, and it seems inevitable that all places in elementary schools will in the near future be occupied by females. H.M. Inspector, reporting on Dunfermline High School, expresses regret "that in a large school like this there are no male junior students." For the present position the Department cannot be held blameless. Notwithstanding the continued representations of teachers, it has refused to give any lead on the question of salaries, holding that it was entirely a matter for the local authorities. The "mouth honour" which has been so lavishly bestowed on teachers has ceased to inspire and attract. The young generation demands adequate guarantees for the future, and in the teaching profession these are not forthcoming. The close connection between emoluments and supply is well shown in the case of the medical profession. The Insurance Act has made that profession the most attractive, because the best rewarded, in the country. Every secondary school is crammed with aspiring doctors, and the medical schools of the country need have no fear of any lack of students in the immediate future. Grant the same terms to school teachers, and the ranks will be full to overflowing in a few years.

THE question has been raised in several quarters whether teachers who have joined the Forces of the Crown should continue to pay their superannuation premiums. Teachers whose salaries are being continued in whole or part by the school authorities have practically no option in the matter, as the premium will be deducted from their salary, but the case of teachers who receive no allowance from their managers is different. They are under no obligation to pay, but as the Education Department has agreed to recognise the period of service in the Army as equivalent to service in school for superannuation purposes, it is altogether to their interest that they should keep up the payment of the superannuation premium. When the time of retiral comes they will thereby have a longer period of recorded paying service, and their pensions will be correspondingly increased. Further, it should be remembered that the contributions all come back to the teacher's dependants should death occur before he reaches the retiral age.

THE Education Department has issued a circular to school managers urging upon them the duty of inculcating habits of thrift among the young. The Department is prepared to supply an adequate

number of the leaflets of the Parliamentary War Savings Committee to every school in order that the parents may be reached through their children. Direct instruction in thrift is also encouraged in the case of the older pupils, and school savings banks are recommended in all schools. It is specially suggested that existing syllabuses of cookery should be overhauled, "so as to secure that the utmost prominence shall be given to the preparation of cheap, but nutritious, food with a minimum use of meat."

THE special committee of the Corporation of Glasgow responsible for the preparation of the National Register has sent a letter of thanks to all the teachers who took part in this work. Altogether, about 1,000 teachers were engaged. More than 700,000 forms were delivered at 235,325 houses. The fatiguing work of distributing and collecting these forms was so speedily done that the work of classifying and tabulating the returns was completed by the end of the second week. The splendid record of the Glasgow teachers is typical of the work done on a smaller scale in almost every town and parish in Scotland.

THE governors of Heriot-Watt College, Edinburgh, have found it necessary to suspend, for the present session, the second- and third-year courses in mechanical and electrical engineering, as the staff and the laboratories in that department have been requisitioned for the making of munitions. They also intimate that they reserve the right to cancel such other courses as may be found necessary, either owing to the extension of the utilisation of the College for munition work or to the diminution of the number of students in any class. With these exceptions, they hope the work of the College will be carried on as usual.

IRISH.

THE results of the Intermediate Examinations which were held in June were published towards the end of August, and the following is a summary of them:—

BOYS.					
Grade	Senior	Middle	Junior	Total	
Number examined ...	893	1620	3879	6392	
Number passing with honours ...	197	304	512	1013	
Number passing without honours ...	416	666	1809	2891	
Total ...	613	970	2321	3904	
Percentage of passes	68.6	59.9	59.8	61.1	
GIRLS.					
Grade	Senior	Middle	Junior	Total	
Number examined ...	501	1061	2526	4088	
Number passing with honours ...	142	231	340	713	
Number passing without honours ...	253	468	1188	1909	
Total ...	395	699	1528	2622	
Percentage of passes	78.8	65.9	60.5	64.1	

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BOYS AND GIRLS TOGETHER.				
Grade	Senior	Middle	Junior	Total
Number examined ...	1394	2681	6405	10480
Number passing with honours ...	339	535	852	1726
Number passing without honours ...	669	1134	2997	4800
Total ...	1008	1669	3849	6526
Percentage of passes	72.3	62.3	60.1	62.3

AMONG the boys nine candidates were deprived of their examination altogether, and one was deprived of his examination in one subject, for having brought notes into the examination hall, or for having given or received assistance during the examination.

As compared with the previous year, the numbers examined in all the grades have slightly increased, last year's total being 10,176. The numbers passing have likewise increased, the total last year passing with honours being 1,606, and without honours 4,438, making the total of passes 9,044, and a percentage of 59.4. The senior grade percentage rose slightly from 70.4, the middle fell slightly from 64.6, and the junior grade rose perceptibly from 54.9. This year the difference between boys and girls is rather marked in the middle and senior grades, to the advantage of the girls, but, on the other hand, it is always to be remembered that the conditions of passing are easier for the latter, as they have one compulsory subject less.

THE Department of Agriculture and Technical Instruction has issued for 1915-16 its usual explanatory circular and regulations in connection with the day secondary-schools' programme of experimental science and drawing. This useful circular, with its official calendar, contains nothing new, but directs attention to the special course in physiology and hygiene, of which the syllabus of instruction has been revised.

THE Department has likewise issued its usual explanatory circular and regulations and programme for technical schools and classes. The explanatory circular directs attention to two or three important points. Teachers attending the ordinary classes in technical schools under the terms of Section II. (a) have the liberty to attend instruction in any subject or subjects a knowledge of which would be useful to them in their work. Managers must submit before June 7th in each year full particulars of the courses of instruction to be adopted. A complete list of the students on whom grants will be claimed must be forwarded by December 5th in each year; and, finally, managers of all schools and classes must keep a systematic record of all students.

THE Department has published as a small pamphlet of seventeen pages two addresses by Mr. T. P. Gill, its secretary, under the title, "Some Ways of Study for Citizenship," the first headed "Nature and Institutions," and the other "A Local Civic Survey." The first was given as a lecture at the Municipal Technical Institute, Belfast, last February, as one of a series of social service organised by the Technical Institute, and the other was delivered also last February at the

Municipal Technical Institute, Armagh. The addresses have been published for the information of technical instruction committees and teachers who desire to promote some teaching upon citizenship, and who have asked for suggestions upon the matter.

WELSH.

THE National Eisteddfod has been seriously affected by the conditions arising out of the war. From the opening ceremony, when it was not possible to sheathe the sword because "there was peace" in the land, to the end, there were smaller audiences and fewer entrants to the competitions than have ever been known before. These circumstances have had their effect on the receipts, the committee having to face a deficit of nearly a thousand pounds. The next Eisteddfod will be held at Aberystwyth, and if the war is then still proceeding will be limited to two days.

VERY successful summer holiday courses have been held in Wales this year. The Glamorgan Summer School at Barry had 400 students, who spent a very pleasant month and did work of a high order. Educational handwork in many materials, training in arts and crafts, biology, and physical drill were strongly represented. At the close Mr. Sutcliffe, the county director of manual instruction and head of the school, and Mrs. Sutcliffe, were presented with a silver tea and coffee service. The Glamorgan Summer School of Mining and Engineering has, after ten years at Cardiff, been removed to Swansea Technical College. At the opening meeting Sir Alfred Mond offered that if two others could be found to do likewise he would give £1,000 to provide scholarships at the college. Principal Griffiths pleaded for better co-operation between the east and west of Glamorgan, and for more direct adaptation of educational methods to the present and future needs of the country.

THE thirteenth annual Summer School of the Welsh Language Society was held at Pwllheli County School. The courses were arranged to provide teachers with instruction in the construction, grammar, and literature of the language, and to suggest suitable methods of teaching. Several speakers urged the importance of a living knowledge of foreign languages to those who would have to help in spreading our commerce; and this is a matter urgently requiring attention in Wales, where the study of Welsh, important as it is, should not have been allowed to oust German, Spanish, and Italian, which were all contemplated in the Central Board's scheme, from the schools; it is even in many places made alternative with French, as the only modern language other than English which is taught. This state of things scarcely bears out the contention that "bilingualism" is of great use in the study of additional languages; much, of course, depends on the definition of bilingualism.

MR. E. T. JOHN, the well-known Nationalist M.P. for Wrexham, in an address delivered at Pwllheli, said:—"Public opinion in Wales generally recognises that the predominantly bureaucratic supervision of elementary education, the dual control obtaining in secondary education, and the unduly academic temper

of the governing bodies of the colleges and the university, all yield results more or less confused, hesitant, and unsatisfactory, largely lacking in co-ordination, enthusiasm, insight, and inspiration. The County Councils of Wales have in several cases urged the need for unity and autonomy in administration, and pending the grant to Wales of general autonomous legislative powers, at least equivalent to those about to be accorded to Ireland, it is obvious that the Central Welsh Board should be merged into a more authoritative body, a Welsh National Council of Education, reconstituted upon a broader basis and invigorated by the principle of direct election, empowered to deal with every phase of education in the Principality, from the university to the most insignificant elementary school, relieving the Board of Education in London of its somewhat meticulous administrative supervision of the activities of all educational governing bodies in the Principality." This very clear statement deserves careful examination as to both the point of view and the details of the expression.

THE problem of the teaching of Welsh arises in great part from the fact of the presence in Wales of many who are engaged in the public service of the country in various capacities, and are rendering valuable services, but who, not being perhaps of Welsh origin, do not understand the language. Practically all educated Welsh people speak English, but many English people in Wales do not speak Welsh. The question arose at a meeting of the Carnarvonshire Insurance Committee, which, on its formation, decided to use Welsh as its official language, while each member was allowed to use which language he preferred. After some discussion it was decided that the minutes should be kept in Welsh, but that copies in English should be supplied to those members who desired them.

At Newport it has been decided that the Education Committee should pay the fees at special technical school classes for such pupils of the Intermediate schools as wished to learn Welsh, provided that they made half the possible attendances. At Haverfordwest Grammar School the headmaster did not wish the language to be taught, as it was not a Welsh school, but the Board of Education required that at least one member of the staff should be qualified to teach it.

CARDIFF Education Committee extended the holidays of the boys' departments of the elementary schools for three days, calling on the teachers to present themselves at the Town Clerk's office at 9 o'clock sharp on those days for the purpose of further assisting in the coding, etc., of the National Register forms. The committee has announced its intention of considering, by way of war economy, the stopping of increments of salary to its elementary teachers. The fact that they were engaged "on scale" has brought up the question whether they have not a contract with the committee, and also whether this cannot be terminated by notice and renewed on new terms! A local paper remarks:—"The material point is whether it is real economy to reduce the wages of active teachers at a

time when other classes are receiving a bonus to cover extra cost of living." The N.U.T. is taking the matter up, and it is probable that the suggestion will not be pressed.

MORE than £260,000 has been raised or promised for the building, equipment and development of the National School of Medicine in Newport Road, Cardiff, the foundation-stone of which was recently laid by Lord Pontypridd. This sum has been raised as the result of the efforts of Colonel Bruce-Vaughan, backed by the generosity of Sir William James Thomas, and the work is a development of the medical department of the University College of South Wales and the King Edward VII. Hospital, Cardiff. Sir W. J. Thomas has also made a princely gift to the Porth Cottage Hospital, in the shape of a sum of £5,000, to be applied to the reconstruction of part of the interior and the erection of a new wing for twelve beds. He makes the condition that the miners shall by a levy provide for the staffing and maintenance of the hospital.

RECENT SCHOOL BOOKS AND APPARATUS.

Classics.

More Latin and English Idiom. By H. Darnley Naylor. 220 pp. (Cambridge University Press.) 4s. 6d. net.—We like this book. To Prof. Darnley Naylor's contention that continuous Latin prose should be reserved for an élite it is difficult to assent, for experience proves that the attempt to teach a language without composition in that language is doomed to failure, although it does not follow that this composition should always be *translation* from English prose. Furthermore, no pupil capable of mastering this book would be incapable of Latin prose, so that the former cannot be a mere substitute for the latter. But there can be no doubt that the thorough and systematic comparison of idiom has been neglected strangely in our classical curriculum, and should be included in the regular work of the fifth and sixth forms. In this way, and in this way only, can a classical course appreciably improve a pupil's knowledge of English. This book contains an interesting appendix on Livy's use of non-personal or abstract subjects with transitive verbs. We have long felt that the received rules on this point need revision, and Prof. Darnley Naylor's statistics prove it. The true state of the case seems to be that there is no objection whatsoever to such constructions provided that the transitive verb does not imply too definitely the conscious action of a human brain. We can say *timor me cogit*, or *cura animum incessit*, because compelling and entering are actions which can be done by brainless things; but could we say *timor mihi persuasit ut fugerem*, or *ira multitudinem convocavit*? Another point worth examination is how far this usage is due to the influence of poetry. Analyses of (say) Cicero and of Tacitus would give very different results.

English.

Poems of To-day. Published for the English Association. 170 pp. (Sidgwick and Jackson.) 2s.—If this book were not definitely intended for boys and girls, one might simply praise it as an anthology which, owing to the position of its editors, has been able to make use of a good deal of prohibited material.

We find A. E., G. K. C., W. B. Yeats, Rupert Brooke, and many other poets of to-day represented; to the adult man and woman the collection is delightful. But the editors in their preface lend the whole weight of the name of their association to recommending the book for schools, and we demur. Bridges's poignant verses on a dead child are not for schools; nor are "Love in the Valley," nor (save for one line) Thompson's magnificent verses to Francis Meynell, nor Yeats's "Folly of being Comforted." The poems seem to have been chosen by people who teach children but do not understand them. The following names are entirely absent, though poems that young boys and girls would love, and thoroughly good poems too, may be found printed over them:—Dean Hole, Halliwell Sutcliffe, Lefroy (the only true poet who has touched athletics), Le Gallienne (memorable for at least one gem), Stephen Phillips, Christina Rossetti, Tagore, W. M. Letts. Forty-seven poets are represented here, some contributing as many as eight or nine pieces; we wish that a hundred writers had been drawn upon. And we are willing to abide by the decision of a committee formed from the fifth and sixth forms of a dozen schools. Perhaps, however, the English Association would prefer to tell the sixth forms what they must admire, including "Love in the Valley." Only as reviewers in an educational magazine do we throw the lightest stone; the book is for adults.

A Child's Garden of Verses. By R. L. S. With Introduction by Guy Kendall. 80 pp. (Longmans.) 1s.—We direct attention to this classic because of the right note struck in the introduction, and because of the apparent inability of poets or anthologists to follow Stevenson's lead in regard to older children. There are many excellent verse-books for little children; witness Moorhouse's "Golden World," the "Children's Rossetti," and others; but when will a great writer, or, for the matter of that, any writer, dive down to the principles followed by the intuition of Christina Rossetti and Tūsitaki, and produce something for older children? Henley, in "Lyra Heroica," and despised Macaulay were on the right track; Mr. J. C. Smith, in his "Book of Verse," part iii., follows; for the rest, do anthologists collect what children love? And yet our literature is full of material.

The Happy Readers. Teachers' Book. By H. Ada Beeny. 32 pp. (Jack.) 3d.—Among the many ways of learning to read, this method of seeing wholes, of acting them, of finding rhyme-words and correspondences in words, deserves the careful consideration of those teachers who are dissatisfied with phonics, phonetics *et hoc genus omne*; the writer has hit on a happy way of combining a good deal that is found interesting in school hours. We wish that the writer had told us how long her experiment takes before the good results are seen. In all reading teaching the only question is whether the method works; for reading and recognising words are but a means. Excellently printed handbooks, 6d. each, accompany Miss Beeny's Teachers' Book.

The Westminster Shakespeare. Arranged for reading by J. W. Mackail. Five volumes. *Romeo and Juliet*, *The Merchant of Venice*, *Julius Caesar*, *Macbeth*, and *As You Like It*. (Constable.) 1s. 4d. each.—This is a new venture in that the learned editor supplies the reader with extremely clear and useful stage directions; the books are beautifully printed on a faintly-tinted paper, and the shape and size are worthy of the plays. A prefatory note which might well have been incorporated with Prof. Mackail's rather inadequate "Note on Reading Aloud" explains

the object of the series; we understand that it is meant for schools. The editor makes a flying allusion to a certain expurgation of the text; but we confidently challenge publishers or editor to watch the result if these plays were read aloud by boys or girls or even before boys and girls with the necessary explanations; no master or mistress would attempt the task without further editing.

Selections from Malory. Edited by Agnes Mackenzie. 197 pp. (Harrap.) 1s. 3d.—Two stories from Malory are given with interesting notes, a glossary, and a full introduction. The stories are "The Knight of the Crooked Coat" and "Morgan Le Fay." The spelling is left as it was. It would, we think, have been better to omit all the talk about Old English (which to a beginner is dry and scarcely needed), and to have spent more time on Malory's own English, which is full of interest. The matter of Britain, too, is rather too closely dealt with, though the summary is admirable. We should like to hear more of Morgan Le Fay's antipathy to Arthur. The one Greek word printed contains, as usual, two mistakes. The little book serves its purpose very well.

History.

(1) *Germania contra Mundum.* By the Earl of Cromer. 47 pp. (Macmillan.) 3d.

(2) *The Danger of Peace.* By J. W. Allen. 37 pp. (Bell.) 1s. net.

These two pamphlets are timely and important. They are timely because they appear at a moment when the cause of the Allies requires faith, and when, therefore, the souls of the timid and apprehensive tend toward the conclusion of a peace at any price. They are important because they both show, from different points of view, that there can be no safe and lasting peace until Germany is thoroughly and completely defeated, however long and sanguinary the task of defeating her may be.

Lord Cromer in a tremendous indictment portrays the degradation into which Germany has fallen during the past half-century of corrupting material prosperity, and, having done this, he points out the appalling results that would flow from even a partial German victory in this war.

Mr. Allen deals faithfully and effectively with the illusions of the pacifists, and shows that the will to peace is at the present juncture the most formidable danger which the Allies have to face. It is a penetrating and masterly analysis by one of the most philosophical of our modern historians.

The German War of 1914— . Illustrated by Documents of European History, 1815–1915. Selected and edited by J. R. H. O'Regan. x+102 pp. (Oxford University Press.) 1s. 6d.—This is a brief source-book illustrative of the historical antecedents of the war. There are sixty-one documents in all. Thirty-one of them deal with the important events of the period prior to the crisis of 1914; the remaining thirty relate to the fateful year which has just come to a close. Among the documents in the first group may be noted those describing the formation of the Triple Alliance, the establishment of Belgian neutrality, the liberation of Italy, the foundation of the German Empire, and the development of Balkan politics. Among those directly associated with the war are the proclamations of the various Powers on their embarking on hostilities. An interesting appendix quotes from the German *Tornisterwörterbuch* details of the German plan for the invasion of England.

An Introduction to the Economic History of England. Vol. i.: *The Middle Ages.* By E. Lipson. viii+522 pp. (Black.) 7s. 6d. net.—This is the first

part of an important work which bids fair to become a standard text-book on English economic history. Mr. Lipson directs attention to the great mass of new material which has become available to the student in recent years, through the issue of the Patent Rolls and other national sources, and through the publication of numerous local records. He has made a serious and successful effort to incorporate the results of recent researches and discoveries in his narrative. He treats the subject topically rather than chronologically, a method which in economic history has great advantages. Thus he discusses (1) the manor and its developments; (2) towns, fairs, and markets; (3) gilds; (4) industry and commerce. Finally, he adds a list of authorities the magnitude of which gives some idea of the vastness of the field of investigation which the modern economic historian has to cover. We can cordially commend this book to both teachers and students.

A Short History of Modern England, 1485-1914. By F. Bradshaw. x+389 pp. (University of London Press: Hodder and Stoughton.) 3s.—This book is specially intended to serve as a text-book for candidates reading for London Matriculation, and it is well calculated to satisfy their requirements. It is so good, however, that it merits a circulation far in excess of that provided by the various matriculation classes of our schools. Several outstanding qualities distinguish it from the average text-book. First, it is a model of arrangement and proportion; the narrative swells in detail and fulness as modern times are approached. Secondly, it groups its material under a small number of headings, and by adopting a topical rather than a rigidly chronological method of treatment it presents a series of lucid studies in brief compass. Thirdly, it lays particular emphasis on social and economic developments, and so keeps purely political affairs in their proper co-ordination. Finally, it is well and clearly written. It is, in fact, a notable hand-book of modern English history, and it deserves a wide currency.

A Picture Book of British History. Vol. ii. 1485-1688. By S. C. Roberts. 70 pp. (Cambridge University Press.) 3s. 6d. net.—This delightful album of historical pictures contains 200 illustrations relating to the Tudor and Stuart periods. They are selected carefully, mainly from contemporary sources, excellently reproduced on art paper, and bound up in a convenient volume 10×13 in. This second volume shows one distinct improvement upon the first, viz. that the descriptive letterpress which accompanies the pictures is a good deal more detailed.

Serbia: her People, History, and Aspirations. By W. M. Petrovitch. 280 pp. (Harrap.) 3s. 6d. net.—Mr. Petrovitch is already known favourably to English readers as the author of an interesting collection of "Hero Tales and Legends of the Serbians." His present volume is historical and descriptive. It consists of two parts. The first gives a sketch of the history of Serbia from the seventh century of the Christian era, when the migratory Slavs made their primitive settlements south of the Danube, down to the present day. The early portion of the story is touched very lightly: three chapters cover the twelve hundred years that intervened between the establishment of the kingdom and 1804. The period 1804-1914 is treated in detail in the eleven succeeding chapters. The story is vividly told, of course from a patriotic Serbian point of view. One realises that it would present a different appearance from the Bulgarian or Austrian point of view. The most lamentable fact that emerges from the chequered record is the deadly

antipathy with which all the little peoples of the Balkans regard one another. It makes one despair of Balkan politics and almost of human nature. The second part of the book is more pleasing. It gives an interesting account of the national beliefs and customs of the Serbs.

A Short History of Russia. By Lucy Cazalet. 88 pp. (Clarendon Press.) 2s.—Of the shortness of this history of Russia there can be no doubt. The events of more than a thousand years are described in a narrative of some 20,000 words, equivalent to about thirteen columns of such a newspaper as the *Times*. It is, in fact, too brief to be either illuminating or interesting, particularly as its scale contracts rather than expands as modern times are approached, e.g., the story of the reign of the present Tsar, who ascended the throne in 1894, is condensed into twelve lines. It serves the purpose, however, of supplying the bald outline of Russian history to those to whom this is not otherwise easily accessible. There is no index.

Geography.

Stories of Exploration and Discovery. By A. B. Archer. 198+xii pp. Maps and illustrations. (Cambridge University Press.) 2s. 6d. net.—In the preface, Mr. Archer states that his book is the outcome of several years' experience in the teaching of an original course on the History of Discovery. The course is supplementary to the usual work in history and geography, is given to middle forms, and spread over two years with a fortnightly lesson. The main features of the discovery of the world are treated in a simple and interesting fashion, and attention is fastened upon the exploits of the great explorers. Some of the illustrations are reproductions of ancient maps and pictures, and others are modern maps as keys to the narrative. Teachers will be well advised to see this book, and to consider the advisability of incorporating its ideas and suggestions into their course; their pupils will also appreciate any opportunity which may be afforded them to read this book.

Educative Geography. By J. L. Haddon. Pp. 76+ viii diagrams. (Bacon.) 1s.—Mr. Haddon has compiled a "notebook for teachers," and demonstrates a useful method of utilising home-made apparatus in the teaching of geography. His suggestions will be familiar to most "geography specialists," but they are conveniently arranged, so that they should be useful to the teachers who are not specialists. Mr. Haddon has several ingenious devices in connection with the school-made apparatus which he suggests, yet credit should have been given to those who first advocated some of the methods mentioned. The title of the book is a little misleading.

Philips' Synthetic Maps. By E. G. R. Taylor. (1) The World. (2) British Isles. (3) Europe. (4) Asia. (5) Africa. (6) North America. (7) South America. (8) Australasia. (Philip.) 6d. net per set.—Each of these map sets consists of two coloured foundation maps and eight transparencies, together with suggestions for class use. For example, regarding Australia, the transparency showing communications may be placed in turn upon maps showing (i) political divisions and town names, so as to learn the places which are connected together; (ii) relief, so as to see the effect of the mountains upon traffic lines; (iii) density of population, so as to discover the connection between the centres of population and the railways, and so on through the series. These maps represent the extreme which may be reached in the provision of ready-made material for the pupil. With adults, the necessity for such time-saving

devices cannot be questioned; but with young pupils the necessity is only partially admissible. Geography has escaped from the trammels of memory work with text-book and atlas, and these maps suggest a new danger—the memorising of facts without a sense of perspective. When the child makes his own transparencies, the time-limit compels attention only to the most important facts, and hence leads to some method of selection of material. The map-maker tends to provide material without regard to relative importance, and only with regard to meeting the largest possible demand and securing the largest sales, and these maps indicate a movement in this commercial direction. Is the child never to be allowed to do anything for itself?

In and Around London. By Constance M. Foot. 276+ix pp. (Jack.) 3s. 6d.—It is a commonplace that the Londoner does not know London; the provincial, whose business brings him to live in the great city, the country cousin, who infrequently visits the Mother City, both get to know London better than the Londoner born. Tubes, trams, and motor-buses are changing this state of affairs, and Miss Foot has put together, in pleasant style, a workmanlike account of the objects of interest which the Londoner is now beginning to explore. This is just the book for a boy who is beginning to wander round the city on his own initiative, or for the visitor who dislikes the stilted dryness of the guide-book and yet desires guidance on his pilgrimages through the heart of the Empire.

Mathematics.

Plane Trigonometry. By H. L. Reed. xiii+200+xvi pp. (Bell.) 3s. 6d.—The writer of this text-book has been eminently successful in presenting the principles of trigonometry in a simple and practical light. It is, of course, almost impossible to introduce any novelty into the treatment of the bookwork, but writers have scope for displaying originality in their selection of material for illustrating the application of the principles. Apart from the examples on "Heights and Distances," those in current text-books have, as a general rule, little interest, but Mr. Reed has been at pains to include many which are concerned with the ordinary objects of daily life. He has made no attempt to deal with the technology of various applied branches of mathematics, such as surveying, navigation, and astronomy; but, on the other hand, a great many examples are based upon these subjects, such explanation being given as to make the solution depend only upon trigonometry. Graphical methods are freely used, but we miss a graphical solution of $a \cos \beta + b \sin \beta = c$. Even a rough sketch is a useful check upon the calculated values. We wish, too, that the writer had been bold enough to give the fundamental formulæ of spherical trigonometry in the chapter on Trigonometry in Three Dimensions. He might take a hint from American text-books in this matter.

Exercises in Laboratory Mathematics. By A. W. Lucy. 245 pp. (Clarendon Press.) 3s. 6d.—This book contains directions for performing experiments to illustrate the fundamental principles and the chief theoretical deductions in mensuration, statics, and dynamics. Much that it contains forms the staple material of every school course of experimental mechanics, but a few of the experiments, such as those on the verification of the equation of the catenary, and the experiments upon the bending of beams and on the flow of water through orifices, are rarely performed except in engineering laboratories. They do not present any special difficulty, however, and there is no reason, except lack of time, why they

should not be included in an ordinary school course. The directions for performing the experiments are, on the whole, clear, and by following them fairly accurate results should be obtained, although in a few cases the methods given seem rather crude. Experiment 1, on measuring the length of a curved line by means of a piece of cotton held down by the fingers, is thoroughly unsatisfactory, and we think it will be difficult to obtain any good results from 116, 117, and 147. With the general plan of the book we have no fault to find, and it should be found very serviceable by teachers who wish to combine some practical work with theory.

Science and Technology.

Experimental Harmonic Motion. By G. F. C. Searle. 92 pp. (Cambridge University Press.) 4s. 6d. net.—The subject of harmonic motion is frequently a source of difficulty to the student, and this is partly due to the fact that but few laboratory experiments have been available for demonstrating and verifying main principles. Dr. Searle's volume represents the wide range of experiments provided for students in the Cavendish Laboratory. Following an introductory chapter on the theory of harmonic motion, fourteen experiments are described, each accompanied by a brief discussion of the theory. The experiments include the determination of g by a simple pendulum, by a rigid pendulum, and by the oscillations of a rod rolling on a cylinder; the harmonic motion of a mass suspended by a spiral spring, and by a torsion wire; and several experiments on moments of inertia. In chapter ii. exceptionally useful information is given on the liable errors of stop-watches, and on the precautions to be observed in determining accurately a time of vibration. The volume is a useful addition to the Cambridge Physical Series, and it can be well recommended to students of mathematical physics.

Introduction to Magnetism and Electricity. By E. W. E. Kempson. 240 pp. (Arnold.) 3s.—This volume is based upon the lecture notes for a year's course of electricity and magnetism as given in the upper school at Rugby. The author refers in his preface to the possibility that students may be led to regard static electricity and voltaic electricity as separate subjects, and he expresses the opinion that the usual instruction in static electricity is not of much help to the beginner in the after-study of the phenomena of the electric current. We are inclined to think that the former statement is more trustworthy than the latter. It is interesting to notice, therefore, how the author introduces the subject of current electricity. The first unit discussed is the coulomb, the magnitude of which is defined by the weight of hydrogen liberated in the electrolysis of water, and the electrolysis is demonstrated by the alternate charging and discharging of a large condenser through a water voltameter, a battery giving a voltage of 130 volts or more being recommended. Oersted's experiment is demonstrated by means of a single wire over (or under) a suspended magnetised needle, and the charge of a condenser is discharged along the wire; and the experiment next described requires a condenser of 50 microfarad capacity. In an earlier experiment the need of about 100 Leclanché cells is suggested. These requirements of very large condensers and batteries are far beyond the available equipment of most laboratories; indeed, in many of them a trustworthy 1 microfarad condenser is regarded as an expensive luxury. In other parts of the book the teacher will find several useful suggestions. The term *remanence* (p. 43) in magnetic phenomena

is not generally recognised; the context suggests that *retentivity* is intended. On pp. 44 and 90 letters are missing from diagrams.

Nature Notes for Ocean Voyagers. By Capt. Alfred Carpenter and Capt. D. Wilson-Barker. xvi+181 pp. (Griffin.) 5s. net.—"The many voyagers who feel a need for information on their unfamiliar surroundings at sea" could ask for no better general account than this of marine natural history and the physical conditions of the ocean. Intended for amateurs, the book provides simple but trustworthy information on the animal and plant life, and the varied questions relating to weather, waves, customs, superstitions, etc., likely to come under the notice of those who go down to the sea in ships. The intimate association of the authors with marine research of various kinds enables them to speak with authority on all these subjects, which they treat in gossipy and unconventional style. The result is a thoroughly enjoyable book, which may be recommended to everyone interested in the sea. It is provided with 139 excellent illustrations, including maps.

Miscellaneous.

War and Christianity. By Vladimir Solovyof. 188 pp. (Constable.) 4s. 6d.—"When shall we understand Russia? Interpreters seem, as in the cases of Mr. Stephen Graham and Mr. Baring, to get near to an explanation; and then comes a book like this, and bearings are confused again. Mr. Graham's preface contributes little to our grasp of the centralities of these three Platonic conversations; yet behind the pages it is easy to see that something deep, something neither Eastern nor Western, is moving. The dialogues may be taken as a fierce challenge to German thought, as a denial of Tolstoyism, as a premonition of Antichrist. Throughout the foreign air of the conversations run lurid pictures, and even the casual reader will be stayed by the tale of the slaughter of the thousand Bashi-Bazouks, the story of the two hermits, and the incomparably vivid "Coming of Antichrist," with which the book concludes; one is at once reminded of Richter and the dead Christ. Written in 1900 by "Russia's greatest philosopher," this book was at once a defence of righteous war, and a counterblast to Nietzsche.

EDUCATIONAL BOOKS PUBLISHED DURING AUGUST, 1915.

(Compiled from information provided by the Publishers.)

Modern Languages.

"General Phonetics." For Missionaries and Students of Languages. By G. Noel-Armfield. xii+142 pp. (Heffer.) 3s. net.

"Easy Lessons in German." By J. Bithell. 116 pp. (Pitman.) 1s. net.

Classics.

"Some Parallels and Differences in Greek and Latin Syntax." Compiled for the use of Examination Victims. By Rev. C. Annacker, S.J. 32 pp. (Blackie.) 9d.

English: Grammar, Composition, Literature.

Infant Readers:—"Harrap's Readers Beautiful." By C. Johnson and K. Johnson. First Primer. 48 pp. 3d. Second Primer. 48 pp. 4d. First Reader. 48 pp. 4d. (Harrap.)

"Perse Playbooks." No. 5. "Lyrics, Play-Songs, Ballads, and Littleman Rimes, by Boys of the Perse School, Cambridge." Edited by H. Caldwell Cook. 211 pp. (Heffer.) 4s. net.

"First Steps in Business Composition." By R. W. Holland. 80 pp. (Pitman.) 8d. net.

"Lessons in Composition." By J. Eaton Feasey. I. A., 56 pp. 5d. II. A., 64 pp. 6d. (Pitman.)

History.

"A Social and Industrial History of England." By Dr. F. W. Tickner. xii+721 pp. (Edward Arnold.) Complete, 3s. 6d.; and three parts, 1s. 6d. each.

"History Pictures—Stuart Period." In special detachable file-portfolio. By G. H. Reed. 32 pp. (Black.) 10d.

"The Pupils' Class-Book of English History." Book IV., "The Hanoverian and Modern Times." By Ed. J. S. Lay. 160 pp. (Macmillan.) Sewed, 8d.; cloth, 9d.

Geography.

"The World and its Peoples." By Franklin and Shearnmur. 44 pp.+16 illustrations. (Johnston.) 7d. net.

"Here and There Stories." Senior, No. 16. "Here and There in Africa." 112 pp. (Macmillan.) Sewed, 5d.; cloth, 6d.

"The River Severn from Source to Mouth." By M. Lanchester. 72 pp., with 58 illustrations and map by the author. (Murby.) 2s. 6d. net.

Mathematics.

"Elementary Algebra: First Year Course." By F. Cajori and L. R. Odell. 214 pp. (Macmillan.) 3s. net.

Science and Technology.

"Magnetism and Electricity." By E. W. Kempson. 240 pp. (Edward Arnold.) 3s.

"A School Flora: For the Use of Elementary Botanical Classes." By Dr. W. Marshall Watts. With 205 illustrations. (Longmans.) 3s. 6d.

"The Principles of Floriculture." By Edward A. White. 490 pp. (Macmillan.) 7s. 6d. net.

"Domestic Work for Rural Schools." By P. H. Arch. 244 pp. (Pitman.) 2s. 6d. net.

Pedagogy.

"Fundamentals in Methods in Elementary Schools." By J. Kennedy. 352 pp. (Macmillan.) 5s. 6d. net.

"A Students' History of Education." By F. P. Graves. 482 pp. (Macmillan.) 5s. 6d. net.

"The Practical Conduct of Play." By Henry S. Curtis. 342 pp. (Macmillan.) 6s. 6d. net.

Miscellaneous.

"University of Cambridge Local Examination Papers, July, 1915 (Preliminary, Junior, and Senior)." (Cambridge University Press.) 2s.

"University of Cambridge Local Examinations, July, 1915, Class Lists." Junior and Senior, Boys, 6d. Junior and Senior, Girls, 6d. Preliminary, Boys and Girls, 6d. (Cambridge University Press.)

"Matriculation Model Answers, Mathematics." Being the London University Matriculation Papers in Mathematics from January, 1913–June, 1915. 140 pp. (Clive.) 2s.

"Matriculation Model Answers, English." Part ii. Being the London University Matriculation Papers in English from June, 1911, to June, 1915. 172 pp. (Clive.) 2s.

"Matriculation Model Answers, Heat, Light, and Sound." Being London University Matriculation Papers in Heat, Light, and Sound from September, 1910–June, 1915. 132 pp. (Clive.) 2s.

"Matriculation Mechanics Papers." Being the London University Matriculation Papers from September, 1903, to June, 1915, with Model Solutions to the last paper and additional Questions. 104 pp. (Clive.) 1s. 6d.

"Jolly Book of Boxcraft." By Patten Beard. 272 pp. (Harrap.) 3s. 6d. net.

"The Acts of the Apostles." Vol. ii. in Murby's New Scripture Manuals. By Dr. C. Knapp. 75+xlii pp. and map. (Murby.) 1s.

"Civil Service Handwriting Guide and Copy Book." By H. T. Jessop. 32 pp. (Pitman.) 6d. net.

"A New Course in Typewriting." By Mrs. Smith-Clough. 72 pp. (Pitman.) 1s. net.

"Practical Touch Typewriting Chart." By Mrs. Smith-Clough. 72 pp. (Pitman.) 2s. 6d. net.

"The True Patriot's Book." By "Orme Agnus." 162 pp. (Pitman.) 1s. 3d.

CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising any article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.

Teachers and Military Service.

To many of those whom Mr. Pease described at the beginning of the war as "my colleagues in the National Service of Education," the question of their duty in the war must have been one of some perplexity and doubt. The importance of all branches of education becomes, if anything, even greater, not less, with the progress of war. I have myself been personally consulted many times by former pupils and friends, now engaged in educational work, and have found it very difficult to express in some cases any confident or decided opinion as to what they should do in the matter. This, of course, was especially the case with some men of great teaching capacity, receptive minds, and reforming zeal. Some, alas! have already been lost; they cannot be readily replaced. In the last resort I ventured to ask Lord Kitchener whether he could express an opinion on the question of the relative claims of military and educational service—an opinion that I might be allowed to quote, if again consulted in the matter. It has seemed to me since then that his reply would be helpful to others, and he readily gave his consent at my request to its publication. The reply is as follows:—

War Office, Whitehall, S.W., August 17, 1915.

DEAR SIR,—In reply to your letter of the 12th inst., Lord Kitchener's view is that those masters, and those only, who can be spared without impairing the work of schools and the training of O.T.C. contingents, should join the military forces of the Crown and leave their schools.—Yours truly,

H. J. CREEDY, *Private Secretary.*

H. P. COOKE.

9 Granville Gardens, Newcastle-on-Tyne.

Military Training in Schools.

In your issue for May last Dr. Rouse states:—"Military training ought certainly to be compulsory in all schools. The effects in Australia and New Zealand have been admirable. . . . If it had been applied to elementary schools our difficulties would have been much less than they are." Dr. Rouse cannot support this statement by an appeal to New Zealand practice. If he knew anything about the subject he should be aware that military training in

our elementary schools was abandoned shortly after our present defence scheme was instituted, and that a system of physical culture based on Swedish drill has been substituted for it. JOHN H. HOWELL.

Christchurch, New Zealand, July 21st, 1915.

FROM the New Zealand Official Year Book, page 250:—"From the age of twelve to fourteen a boy at a primary school performs a certain amount of physical elementary training. . . . This is not considered military training under the Defence Act.

"On reaching the age of fourteen, or on leaving a primary school, the boy is transferred to the Senior Cadets, and then becomes a member of the military forces, though not liable to be called out to fight.

"He remains a senior cadet till he is eighteen, on reaching which age he is, if physically fit, drafted into the Territorial Force. As a Territorial soldier he is liable to be called out at any time for service within the Dominion."

Your correspondent is not quite true in the letter even, for a boy above fourteen years of age at an elementary school appears to be liable, and he is quite untrue in the spirit of my remark, for I meant that those who attend or have attended an elementary school receive military training as well as others.

W. H. D. ROUSE.

Teaching to Read.

In your last issue you gave an account of an experiment in teaching reading in which a section of children who had been taught first on the simplified spelling system, and later from the current spelling, for fourteen months in all, were pitted against children who for nineteen months had been occupied with the conventional spelling only, the result being a balance in favour of the simplifiers. Such experiments serve a very useful purpose in supplying data on a subject where data is still rather scanty. Individual teachers could do much to set such experiments in motion, and the Simplified Spelling Society will gladly assist any effort in this direction by supplying free to any *bona fide* inquirer a copy of the "First Reader" from which the experiment was made. Teachers are invited to send a postcard to the Secretary, Simplified Spelling Society, 44 Great Russell Street, London, W.C. The first experiment showed that the transition from simplified to current spelling is easy, and that even with the additional labour of making the transition a gain of several months' time, as well as a distinct improvement in articulation, is the result of beginning the teaching of reading with a rational spelling.

C. E. JUST, *Secretary.*

Simplified Spelling Society.

The School World.

A Monthly Magazine of Educational Work and Progress.

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The School World

A Monthly Magazine of Educational Work and Progress.

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SIXPENCE.

THE VOCATIONAL EDUCATION OF GIRLS AFTER THE WAR.¹

By MISS HALDANE, LL.D.

THE war has brought a completely fresh set of problems before us as regards the education of girls, and it behoves us to consider our ground afresh when we think of what our object and aims should be, as we are attempting to do to-day.

For it is perfectly clear that on one side at least the "woman's question" has reached a new phase. Numbers of occupations hitherto considered to be men's domains have somewhat suddenly been opened to women, and the suddenness of the call has both prevented due preparation being in all cases made, and caused the entry into new occupations to be made in an irregular way. Thus, just to take one outstanding instance, very many women are entering Government employment, but in scarcely any case has this been done in accordance with the regulations suggested by the Royal Commission on the Civil Service which has recently reported on the matter. And as much of the work required is for the temporary replacement of men and temporary war work, in some cases it is scarcely possible that it should be otherwise.

Still, we are doubtless confronted by new conditions which will immensely modify our conception of the sphere of women, and we feel convinced that there will be a readjustment of social and economical relationships which will have far-reaching results alike on the worker and the community. Some may think that what is done for a temporary emergency may leave temporary results, but that we cannot believe, for we know that in the development of the race nothing is really temporary. And, after all, will the work be temporary? We know too well that there must be a shortage of men with casualties reaching

very many thousands. Marriage will cease to afford the normal career for very many women, and far more women will have to obtain economical independence. Parents will have to think much more seriously of the question: "What to do with our daughters." Even now the ordinary middle-class father is anxiously applying himself to the problem, and in quite a different spirit from that of earlier days.

Then comes the undoubted fact which will tend to the further employment of girls, that certain avenues of employment have been opened to them in which it is clear that they are as efficient as men. Whether or no they continue to work in these occupations may depend partly on whether they continue to demand the same remuneration as their brothers, and partly on the supply of male labour. It is an interesting speculation whether the female ticket collector, lift-attendant, grocer's assistant have come to stay, but in any case it is known that there is a reservoir of possible workers to fall back on, which in some cases is certain to be tapped.

The final possibility is serious. After the destruction that war has wrought—destruction of property abroad as well as at home—and since much work has been commenced and temporarily abandoned, or left aside, there will surely be a large demand for labour. But with that increase in the call for labour there will be enormous taxation, and living will be hard, and possibly wages low. This will mean that every member of the family who can will be called on to contribute to the family purse. Thus, the woman will have a special demand made upon her as an earner.

This being so, how are we to prepare for the new conditions? We must put aside abstract discussion and face the fact that we have closed one chapter and opened another. The chapter that is closed was one of much import. It told of how education in its modern sense became possible for women at all. It

¹ A paper read before the Educational Science Section of the British Association at Manchester, September, 1915.

told of the wonderful struggles made to that end, and it has made life a different thing to most of our sex and generation. But we must confess, when we look back, that it scarcely faced the problem as it presents itself to-day, because in those days there were so few occupations open to women that required definite instruction in order to allow their being satisfactorily filled. Also we must remember that the standard in many cases has completely changed, and that occupations which were not definitely prepared for by previous education are now on a different plane, and that the plane will continuously tend to rise as our nation becomes a more educated nation. And judging by previous experience, it seems likely that the country will, directly the thunder of war has ceased, set to to undertake this education in a thoroughgoing manner. A long period of peace may tend to make a people of excellent natural abilities apathetic about matters which should concern it most acutely, and which are engrossing the attention of those of its competitors in trade who are watching every opportunity for the chance of taking its place. And special responsibility devolves upon the sex on which special responsibilities must now rest.

The danger then is, that in view of immediate necessities girls shall be pitchforked into occupations of some sort or other, with a certain technical training hastily acquired, but before they have learned to think and act as educated women—that is to say, before they have learned something of their place in the world, and how to meet the unexpected events in life as well as those that confront them every day. This is what brings discredit on the employment of women outside the old-established grooves. Absorption in trifles just means that the bigger things have not yet got a hold, and narrowness, that the world has not yet disclosed her treasures.

It is only necessary to study the curricula of some secondary schools to see what is meant, and that the danger is not imaginary, but very real. It is easy to argue that unless commercial or "business" training is introduced parents will not allow their girls to stay at school, but those responsible must remember that it is short-sighted policy to begin in school what ought to come after school training is completed. For how is it possible that girls should be fitted to enter upon any occupation in life requiring a trained mind, before they have reached the ordinary standard (none too high) of a completed secondary course?

This is, of course, recognised for those likely to enter the university, but it is equally true for those who are going to embark on training

for the higher domestic arts, nursing, health work, the lower branches of the Civil Service, etc., whom we have specially in view at present. If we have a girl entering on her training at a school of domestic economy without a sound basis of real education, we cannot expect her to be intelligent in her work, whether it be teaching her pupils, directing the domestic side of institutions, or even the ordinary duties of managing her own household.

And in the nursing profession it is particularly important that the probationer should have a liberal education. This was specially insisted on by the president at a recent meeting of the National League of Nursing Education held at San Francisco, and every intelligent matron will be of the same opinion. An educated girl performs her work in a wholly different spirit from an uneducated.

A woman lives a somewhat narrow and very concentrated life while training in hospital, and it is only if she already has wider interests that she is able to realise that her work must be regarded in relationship to what is outside, and is therefore able to take a balanced view of what tends to be too immersing. How many nurses who were not educated women beforehand actively keep up their interest in literature, politics, etc.? and small wonder that they do not do so when their whole training is conducted under a sort of convent rule, with little leisure and no chances given to develop faculties outside those called into operation by their work. Hence the matron's constant endeavour to find educated probationers.

Then with the great professions that are opening up to girls in respect to public health and sanitation, it is most obvious that an educated woman is of far greater value than one who has not got the foundation of knowledge that enables her to observe. The technical part of her education is easily obtained after leaving school, but it requires knowledge of a wide sort, intelligently to apply what is technically acquired. For this work women specially require to fit themselves for the difficult task of reading human character and understanding by reading how certain developments have arisen, and consequently how they may be met, and this surely requires education.

For work in the various Government Departments, it is clear that unless a girl is to be kept in the drudgery of mechanical typing or letter-sorting without hope of rise, she must have the education that will enable her to perform intelligent work. In an investigation into the work falling to women in the Civil Service, one of the most depressing things was found to be the fact that girl typists and clerks

were brought into the Service without the hope of rising in it to anything beyond mechanical drudgery. The typist in Government service is apparently to be a typist to the end of her days, while the intelligent typist in, *e.g.*, a lawyer's office, is capable of editing the letters, and gradually becomes a responsible clerk of much value to her employers. Then the girl who comes as a "girl clerk" into the Post Office and elsewhere has to give up almost all her "educational" curriculum in order to "cram" for an examination which is inferior in quality to the men's second division examination. The "female sorter" is even worse off, because she has to give up still more of the ordinary curriculum of a normal school course. She ceases, for instance, to study history, English, modern languages, mathematics, science, drawing and domestic economy, not to speak of giving up all the school exercises and games which form so valuable a part of school training. She is forced to concentrate on the few elementary subjects, arbitrarily chosen, on which the examination is held.

Thus, both these large classes of women have virtually to say farewell to the studies which help to form a woman's life, whether on the literary or domestic side, and to set to to work up at a cramming institution just those subjects that pay, knowing that the knowledge so obtained will be as easily forgotten. The physical side of the girl suffers as much as the intellectual, and she goes forth, in every respect undeveloped, into the service of her country—the country that ought to give an example of thoroughness, instead of a standard of inefficiency that others are too ready to copy. And as all mistresses know, the evil does not stop there. The schools themselves, though with many noble exceptions, are inclined to allow this "special preparation" to creep into their curricula in order to prevent their girls from leaving, so that we find ourselves in a vicious circle. And the effect is not only seen in the few hundreds of girls who each year enter the Civil Service. The examinations are taken by multitudes who fail, and who, overstrained physically and undeveloped mentally, crowd into other occupations. For many of the examinations there are at least ten candidates for each place to be filled.

The Civil Service is perhaps the outstanding example of the evils that come from an uneducative education, mainly because its influence is so great. But we shall have the same sort of result in the many new openings that are becoming available for women. There appears to be nothing between a cramming competitive examination and a simple system

of interviewing with a possible qualifying examination, which may be better, but which is usually very loose and, for Government work, has obvious and serious disadvantages.

We see that the evil exists; what, we may now ask, is the remedy? Much light may be derived from the very interesting report published by the Consultative Committee on Examinations in Secondary Schools in 1911. It is indeed time that the recommendations there contained were laid to heart. The scheme advocated is that there should be a Secondary School Certificate Examination held when the pupil is about sixteen years of age, which should be a suitable test of general attainments. This should not be an external examination of the old type, with so many "set" books, but a recognition of the whole record of the school's work and of the pupil's energies. Being a test of the "school record," the pupil should have been in attendance at the school for a period of at least three years after the age of twelve. The examination is designed, so to speak, to be a standardised one, guaranteed possibly by some approved central council, and recognised as giving entry into commercial pursuits. It would be as comprehensive in scope as possible. A later examination for those remaining longer at school would be adapted for university candidates and those entering the learned professions. The objections to examinations which have been spoken of would not in this case hold good, for the whole class would be presented for examination rather than any individual, and the scholastic record of the pupils would be taken into account before a final decision is made. The idea is to sweep away the multiplicity of examinations of the old type, and have one record of the candidate's having received a liberal education.

The practicability of this scheme has been shown in Scotland, where the leaving certificate, which is taken at about eighteen years of age, and admits to the university and obviates the necessity for a variety of external examinations, is now well established and increasingly made use of. And for the purpose we have in view in this discussion—admission to the ordinary technical occupations—there is what is called the Intermediate certificate, which can be taken at about sixteen years of age, and which opens the way for certain occupations. To take just one example, it is requisite for those who are about to embark on the training for domestic economy at a recognised school. The point about these certificates is that they should be regarded as "school" certificates, and as signifying that the pupil has not alone worked up for an

examination which, for the time being, is the end and object of her existence, but that she has had the benefit of school life in a good school, has had the companionship of fellow-pupils and intelligent teachers, has taken part in the games of the school and presumably benefited physically from the exercises undergone, and the general care that has been taken of health as well as mind. Domestic training has probably also formed a part of the girl's education as handiwork has the boy's.

Now for the purpose of a general education this school training is invaluable, and the constant fear is that it shall be lost sight of in the press for so-called practical work, and before the girl has had her chance. The girl is probably more "crammable" than the boy, since she develops earlier and often takes an ultra-serious view of her responsibilities, and also has a more detailed mind. Therefore for her this danger is specially pressing.² We want to prepare the girl so far as possible to meet life at all its points. We want, above all, to give her "interests" in the wide sense of the word, so that whether her life is somewhat dull and mechanical, as so many women's unluckily are owing to the nature of the work assigned to them, or full of the healthy cares of domestic life, she shall at any rate not be unduly narrow in her outlook, and if her life-work is in the home, have the intelligence to help her husband in his work and assist in her children's education.

Our allies in France realise well what is needed when they speak of the danger of "*Sacrifissant l'esprit pour les connaissances.*" We are more liable, I expect, to make this sacrifice in our country than are the efficient women of France, who have shown in these late days their wonderful power of adaptation—a power of adaptation which requires cultivation of mind, and that is seen to its perfection in an ancient civilisation like the French. One cannot imagine a Frenchwoman consenting to that ignorance of her husband's business affairs which is taken for granted by so many middle-class women in England. When a woman permits herself to limit her interests to her household, it is no wonder that when times of stress come she is unable to grapple with matters of which she has allowed herself to remain uninstructed. Old civilisation may have something to do with these highly developed qualities and capacities in France, but is there not something in the thoroughness of the French secondary-school teachers' training? And does the

French girl's charm—a charm which is sometimes wanting in our high-school girls—not depend a little on the value that is accorded to it?

In Mr. Oliphant's interesting report on French secondary schools for girls we are told that in every new Lycée in France £1,000 is devoted to the appointment of laboratories, museums, and libraries, and that the endeavour is not only to produce an atmosphere of beauty, but to bring the scholars into contact with a first-rate teacher of the particular matter of their study—one who has to prove herself fit to teach. Surely this training is wanted for the woman above all, for hers is the task of oiling the wheels of life and making them run smooth; she should be the centre of domestic life, the paymaster of the family, the adviser of young and old, so that, above all, she requires the special qualities of self-control, adaptability, and largeness of vision. Let us struggle to arrive at these great ends, and make it clear that knowledge is not to be esteemed because of its utility in passing through the hands of some examination-fiend whose catches and quirks have somehow to be defeated, or because it enables us to earn money before we have come to the first step of loving learning for itself.

The late Prof. William James tells us that the best educated mind is the one that has the largest stock of ideas ready to meet the largest possible variety of the emergencies of life. The lack of education, then, means that one does not possess these ideas, experiences, and stores of memory, and therefore one is not fitted to meet the commonest of life's problems and events. It means that we cannot act as we should do when the ordinary routine is set aside. Hence we see but one obvious side—the one probably that on the material side affects our well-being, and is therefore likely to be the least interesting. We miss more than half life's joys.

In conclusion, I should like to say that we have immense responsibilities placed upon us in the coming years. A great rebuilding will have to take place on a ground which has been cleared in a material sense and still more in a moral sense. We shall have new ideas to develop and new problems to deal with. Many preconceived ideas will have been shattered. How are we to mould our young people so that physically and mentally they shall be good citizens of this new world? This is a tremendous question that confronts us as a nation, and on its answer depends the future of our British race. Shall we face it and declare that, poor as we may be, we shall not economise in what truly is the source of our life as a nation? If school-buildings must be plain, let our teachers

² The Central Bureau for Women's Employment is actually paying through its Loan Fund for girls to remain at school rather than encourage a hasty training at an immature age, and the Students' Careers Association is doing its part in the same direction.

be fitted for their work, and capable of carrying it out. Above all, let us not allow our people to be tempted by a false economy that would stunt our boys and girls by sending them into the world uneducated and physically unfit, and flood the market with inefficient men and women. By so doing we shall play into the hands of our enemies as certainly as if we sent our men untrained into the trenches. Let us see that whether a school course is long or short, it is efficient so far as it goes, and that going to school does not mean anything other than preparing for the work that is our work in the world.

THE EDUCATION OF GIRLS IN ITS RELATION TO THEIR FUTURE CAREERS.¹

By Miss RETA OLDHAM, M.A.

Headmistress of the Streatham Hill High School.

I CAN certainly lay no claim to originality for the views which I shall venture to lay before you to-day. Such as they are, however, they have been gradually formed by one who has been actively engaged in the education of girls in school during a period of years which has seen a marked, though not a sufficient, increase in the careers subsequently open to those girls, and who has been very deeply interested in that development. In that fact lies my sole qualification for addressing you.

No doubt it is inevitable that at this particular time we should find our chief interest in speculating as to the developments in education rendered desirable by the crisis through which we are passing, and by the situation likely to exist after the war. We must expect that one social condition—the numerical preponderance of women over men—will be intensified, and that another—a shortage of men in many occupations—will make itself felt, how urgently we cannot yet say. Now if education is indeed a preparation for life, these conditions must and should affect it. No one will deny their gravity, and the problem is how to deal with them that, grave as they are, our national life shall nevertheless continue unimpaired—even, as some of us venture to hope, purified and strengthened by the trial through which our country is passing. But the dangers are serious—on the one hand there is the inevitable denial to many women of those opportunities of marriage and motherhood in the accepting of which lies, as many think, her power of performing her highest service to the State; and, on the other,

the restricted output in many fields of production which may result from the sacrifice of so large a proportion of the best young manhood of the country.

We shall all desire to approach the question from the point of view of the good of the community, rather than that of any section of it, however large or vital that may be. But it is at least probable that everything which tends to develop women's highest powers will also strengthen and vitalise the community. Those, if any still survive, who argued in the past that free choice of employments, and such freedom to rise in them as men have, was inadvisable because, if accorded to women, it would tend to divert them from that motherhood which is their one *indispensable* contribution to the service of the State, must surely now lay aside that argument, since, as has often been pointed out, it is palpably unjust to specialise a whole sex to a function which many will not be called upon to perform. If opposition based on such arguments continues after the war, the sense of injustice must inevitably produce then, as in the past, social unrest and revolt, and a revival of all the old controversies.

There are two directions in which, as it seems to me, further and more rapid progress is needful. First, there should be a free entry for women into all professions and callings from which they are not physically debarred, and a free way through those callings. Entrance to them and promotion in them should be by the same tests and on the same conditions as are applied to men, and there should be neither artificial restrictions based on prejudice, nor monopolies in the interests of one sex. Moreover, the exclusion of women for physical reasons from any calling should not be a matter for decision by men only. It should form one of the many questions which would in the future be decided, not by one sex for another, but by representatives of both for the community. The question of the relative fitness of men and women for many professions and callings can be fairly tested only when they are open to both sexes alike, and only thus can the State be sure that it is likely to receive from its citizens those services which each can best perform.

The second great step should be, I think, resolute and considered efforts to raise the status of those women whom, for want of a better name, we must call the domestic workers or home-makers. Whether mothers themselves, or caring for the children of others, presiding over their own homes or making them where otherwise no home would be, they are performing services of vital importance to the community. They have, therefore, a right

¹ A paper read before the Educational Science Section of the British Association at Manchester, September 1915.

to the best possible education and training for the discharge of social functions indispensable to the health and welfare of a people, and to the honour and rewards due to great tasks well discharged.

The fact that women are still debarred from careers for which they are naturally well suited reacts unfavourably upon their education. A boy looks out upon life and sees many and varied fields of activity open to him; a girl, although she undoubtedly has more choice than her grandmother, has far less than her brother. It is all the more difficult to give her the type of education which will develop her best powers; economic reasons force schoolmistresses as well as college authorities to consider the possible openings in life when the period of preparation is over, and often reluctantly to warn the student against lines of study which cannot be expected to bear economic fruit. The hard fight which opened the medical profession to women has to be fought over again for every other profession, with infinite waste of time and energy and at infinite cost of mortification, discontent, and rebellion. Try to give a reasonable explanation to an intelligent, keen girl of such anomalies as opening the profession of medicine and keeping that of law closed; of discouraging her entry into architecture; of refusing her professional recognition as accountant, and administrative responsibility whatever her fitness; of even debarring her from a share in the counsels of those churches of which her sex is the faithful and devoted support, and you realise that if accusations of frivolity, irresponsibility, and narrowness on the one hand, discontent and unrest on the other, are still not without justification, some of the blame falls on the social system which seems framed to damp rather than fire her ambition.

A girl, ready to begin life, who sees the narrow spheres open to her, the obstacles to promotion, the mechanical and monotonous work so often reserved for her, is without much of that strong incentive to hard work which exists for her brother. It is often remarked how lads from the universities are often by our system placed—say in our Eastern Dominions—in positions of responsibility for which they have had no direct preparation, and how well, on the whole, they answer the calls upon them. But they have known that such calls might come, and their minds and characters have made ready to meet them. We believe that our girls would respond in like manner to a like stimulus, and we want to see them delivered from the sense of unfairness which the abler ones in particular cannot escape. Even the less gifted, measur-

ing themselves against their brothers, find that in employment requiring only mediocre ability the same unfairness prevails. In business houses, in Government employment, man's pay is higher, his opportunities of rising are greater, though his work may be but equal or even sometimes inferior. How can we justify this? We cannot satisfy the young woman of our day with the old arguments of home as woman's sphere, or man the family breadwinner, when she sees so many ill-paid women with no home spheres, and well-paid men with no families to support; and so we grow convinced of the necessity of fair and equal treatment in this matter, of the free field for women as well as for men.

I believe that the opening of such a field would have a very marked effect upon the work of our schools. The present situation is that in business, as in Government employment, save for a number of exceptions so small as merely to prove the rule, there is no scope for women of first-rate ability, and in lower posts no general adoption of the principle of equal pay for equal work, or of the promotion of the fittest, irrespective of sex. A change in such matters would do more than anything else to make women take the task of preparation seriously, lose their inclination to look upon professional and business work as a stop-gap till matrimony comes their way, and show, by interest and desire to understand and improve in their callings, their qualifications for responsible and important posts.

But even at this juncture, when the State has been calling upon women to volunteer in its service and to set men free to serve in the field or the munition factory, dangerous tendencies have made themselves felt. Able women have been denied the opportunity to serve the State in responsible posts, and there has been a kind of tacit agreement that even the great need of women's co-operation in these times of national stress is not to be allowed to operate in favour of a larger introduction of women into the posts men wish to occupy. In clerkships of all kinds, whether in banks, business houses, or Government employment, where women have replaced men, work has been so rearranged and regraded as to reserve for men every atom of interest and responsibility, and to turn over the routine and mechanical portion to women. The same tendency has been observable in industry. To eliminate brain-work and condemn all women to merely mechanical work is a palpable injustice and an obvious danger. A new convention seems to be rising to take the place of that old one which barred many employments to women. These they may now enter, men being scarce, but on the condition

that, whatever their ability, they must remain in subordinate posts. If this vicious tendency is not checked, we shall see in the future the boy trained to be, as it were, the officer by natural right, his sister to be the private. I think the time has come for the serious attention of the community to be directed to this matter. In the setting-up and fostering of such practices lie the seeds of much future misery and unrest.

It is a common experience of those who work in our girls' public schools that there is a certain unreality in lessons on civic rights and duties given to those who, coming to women's estate, will be denied some of the elementary rights of citizens by those who have never enjoyed them. And I sometimes think that a certain remoteness from actual life in the atmosphere of those schools, a certain want of that interest in all that concerns our country and our people which is the very grammar of patriotism, is due in some degree to the same cause. We took in hand the duty of giving our girls public spirit, but we gave them too often merely public *school* spirit, and the war has revealed it to many. The school and the house stood for too much, the State for too little, in our school life. In the wise words of the late President of the Headmistresses' Association, "School preparation for life was directed to no definite end: the service of the community, the country, the Empire, was not explicitly aimed at. School life and school training were remote from national life, and suffered from a lack of definite and patriotic aim."

If this be, as I think it is, a true picture, some of the blame rests, I fear, with us who guided them. Too many of us on school and college staffs have been ignorant or indifferent regarding contemporary politics or urgent social questions lying outside the range of direct educational work, and this aloofness must have had its effect upon our pupils. We should cease to give exaggerated value to ideas good in themselves, but only valuable as means to an end, as the bridge from the individual to the national ideals. We should train our girls for that larger participation in the public life of the nation which we desire for them by giving them that sense of national responsibility, that readiness to subordinate their personal interests to the welfare of the State, that will alone make them worthy of the full citizenship which they must surely soon enjoy. To this end we should, I think, do well to foster more than we do the qualities of courage, self-reliance, and power of independent thought and action in our girls. We should accustom them, as an instance, to the idea that since in the future they will almost

certainly have business affairs, however small, to manage, incapacity in managing them will reflect as much discredit upon them as it would do upon their brothers. The notion that "business" must be a sealed book to women, who must always look to some man for advice and direction in the simplest transactions, is no doubt giving way gradually before the logic of facts, but we educators can do something to hasten its final disappearance.

There are many who question sadly whether with the development of qualities recognised as indispensable in men we shall be able to preserve in our girls those gifts of modesty, gentleness, grace, and dignity long regarded as the special endowment of the ideal woman. But is not our problem—and one well worth the solving—how we may adapt that fine ideal to the changed conditions of our times, without losing all that it held of truth and beauty?

Turning now to the second suggestion submitted—the raising of the status of domestic work and workers—I venture to say that in no question have less consistency and logic been shown. Those who constantly and rightly emphasise the importance to the State of this activity usually lose sight of the necessity of raising its dignity and social estimation. Few could be found to deny that, in words which soon became famous, "the foundations of national greatness are set in the homes of the people," but, if so, how is it that we have thought the girl destined to be the home-maker the one whose education could be the earliest cut short, and who required no scientific or professional training? And so little has the opinion of the home-maker "counted" that even when legislation entered the homes of the nation, interfered with the children, and regulated many domestic activities, she has been but little called into council, though her practical experience and concentration on such matters singled her out as a competent adviser.

There is extraordinary inconsistency surely in insisting at one moment that right motherhood and home-making are the highest and most sacred tasks of women, being indispensable to the strength and prosperity of the State; and, at another, that those who perform them should be denied the wide culture as well as the careful professional training recognised as essential for workers in other skilled callings. I suggest that improvement in this matter would result if, first, at some period of school life, there should be one year when training in the domestic arts should be given a large share of the time of every girl, whatever her ability and prospects. As naturally as we seek to inspire her with interest in history or poetry (without necessarily intend-

ing her to be either historian or poet), we should lead her to think of those activities which are, and will remain, the special gift of her sex, as deserving of her best abilities and deepest interest. To them she should be led to apply and relate much of what she has learned and is still learning in other subjects, and in them she will find wide scope for her talents.

I know well that much in this direction has been done in many schools, but I should like to see it universal and recognised as essential in the education of every girl. Two great benefits would, I think, result: (1) We should early distinguish those whose tastes and abilities lie markedly in this direction, and who should be strongly advised when the right time comes, to make such subjects those they choose for advanced study; (2) we should get rid of that stigma of inferiority still borne by the domestic arts which leads to the selection for such pursuits of only such dull, unambitious girls as would be mediocre in any calling, and who, as things are at present, so far outnumber in domestic work those of better brains that the calling is looked upon as a refuge for the mediocre. If girls who, to keen, bright intelligence join, as many do, a genuine love of children and the practical ability which this early compulsory training might reveal, were urged first to take the fullest advantage of the more advanced work at school, and if possible of the university, and to make their subsequent *professional* training one for domestic life, we should soon see the result in the more enlightened care and nurture of children, in improved household methods, labour-saving arrangements and appliances, in judicious choice of food, good cookery, increased thrift in many directions.

One of the effects of the present costly struggle must be, we fear, a shortage of male labour. Is it not high time that women and men alike should be taught to be men and women of their hands, to do their own small household repairs, and to be less dependent than we have grown to be upon the labours of others? I should like to see every girl taught the use of simple tools, light carpentry, even such things as painting and paper-hanging, and I believe she would derive quite as much pleasure and what we call "recreation" from thus adding to her practical usefulness as she does in those school games on which, in imitation of her brother, she lavishes so much time and energy. Practical capacity, deftness of hand, resourcefulness, inventiveness, power of adapting means to ends, are great contributions to the comfort of the home, and should be far more recognised as essential objects of education. If some time has to be

spared from studies which have been our own delight, we shall reap the reward when we note the quickened interest and pleasure of many pupils whom we have never hitherto been able to interest. Of course, we shall find and encourage the girl whose life-work should plainly be not practical affairs, but thought, speculation or research, but even she may do better work in the world for the time spent in gaining some insight into those activities which occupy so much of the thoughts and life of masses of her fellow-women.

But, it may be asked, what are the careers proposed for these educated and trained domestic workers? Failing marriage, what scope will they have in the future? This is a question which my limits prevent me from discussing fully. Yet the future may hold possibilities of great importance for such as these. We heard a great deal in this place yesterday of military training in school to fit boys for the defence of their country against foreign foes. Perhaps we do not always think enough of the duty of defending it against still more deadly foes of vice and disease, which, springing from drink, overcrowding, and maternal ignorance, play havoc with our infant population, killing masses of children, and leaving the others to grow up sickly, feeble-minded, or depraved. If ever the State recognises sufficiently the duty it owes of providing a reasonable chance for every baby born in our country, an enormous field of usefulness will open for women thus trained, and the preservation of the citizens of the future may come to be recognised as the supremely great, and as the *special* national defence service of our sex.

If, however, the great work of home-making and child-nurture is to attract increasingly many of the best intellects among women, and satisfy their aspirations and ambitions, should there not be added to its more intimate and sacred rewards generous public recognition of its value to the State? It would be a fitting sign of that recognition if the State placed in the hands not, as at present, of men, but of suitable women, the control of certain branches of its Departments, such as those which deal with the care and protection of children, with maternity and child welfare schemes, and others for which the special knowledge and experience of able and suitable women and the sympathy that springs from knowledge would be invaluable qualifications.

One of the lessons of these difficult times seems to be the necessity for increased effort in all directions, and not least in education. If we look at the masses of our fellow-women engaged in industry, we are told that the most potent obstacle to improvement in their con-

dition is their own inertia springing from ignorance and lack of training. There is little scope *for* them in industry because there is little skill *among* them. Beginning, then, with a generous provision of trade schools and working through every section of our female population, we need to prepare and train them better, to adapt the means—education—to the end—life. The great national peril through which we are passing has opened our eyes to many follies and inconsistencies in our ideas and habits. May it for ever destroy the most dangerous perhaps of all—the idea which has been so persistent with our people that we, at least, can dispense with systematic and careful preparation for the business of life.

THE EDUCATION OF GIRLS FOR CLERICAL WORK.¹

By MISS E. A. CHARLESWORTH.

THE suggestions I have to offer as to the education of girls who intend to take up clerical work are made from the point of view of one who has spent her life in such work, and has been in close touch with many other women engaged in it, as a member of the executive committee of the Association of Women Clerks and Secretaries and the management committee of the Friendly Society connected with that association.

As the outcome of this experience I have arrived at the conclusion that there are some general principles the inculcation of which is of greater importance and value as a preparation for work than any kind of special instruction.

The most important matter in preparing a girl to take up clerical work is not to provide adequate technical instruction, but to impart the knowledge which brings with it self-reliance. The problem to be faced is how to inculcate the spirit of independence, so absolutely essential to every woman if she is to meet the changed conditions of life in the immediate future.

In this connection the two directions in which the most damaging weaknesses are observed are:—

1. The unwillingness, especially of the younger women, to face the whole cost of living.
2. The failure to appreciate the place of the individual worker in the social economy and consequently to realise the influence of her individual actions upon the welfare of her fellow-workers.

With reference to the first point, this unwillingness is obviously shared very largely by parents, as can be seen by the number of young women who accept a salary of less than £1 per week—indeed, as little as 12s. 6d. is common even in London—for clerical work, especially if they regard the post as genteel. Clearly 12s. 6d. a week does not cover the cost of maintenance for a young woman who lives in the suburbs of London and goes to town every day. Yet she is the last person to consider on whom the burden of her maintenance is to fall. And here it may be said that not only young women, but the general public, and even the Government, need a little enlightenment on this point.

If it is difficult to get girls to realise the cost of the present, how much more difficult is it to rouse them to think of the future. As a rule they are not sufficiently enlightened on economic questions to be able to foresee the probabilities and possibilities of life and to realise that their earnings should provide for bad times as well as good, extraordinary as well as ordinary expenses. If education could help them to do this, they might be led to make whatever provision was possible for such contingencies as sickness, loss of work, etc., both by taking up a career in which there was a reasonable prospect of adequate remuneration and by saving money in early years. A young woman who has never been warned to expect or provide for adverse circumstances is apt to become unduly depressed when overtaken by them, and to regard her position as hopeless. The attitude of even the best educated young women towards this question of making provision against sickness is at the present time very far from right. They dislike compulsion, and yet it is rare indeed to find them making any voluntary arrangement.

Experience in connection with the Women Clerks' Friendly Society teaches that even where a definite future advantage can be secured at the expense of a little trouble girls are often unwilling to take it, and seem to prefer the risk of becoming more of a burden upon others than they need be to taking a simple measure to prevent it (*e.g.*, obtaining proof that they have been continuing their education until the time of taking up work). Again, they frequently explain that they will not require a panel doctor because they can always depend upon the services of a friend who will treat them for nothing! Education might help girls to see that it is right for them to pay their own way, fully and honourably.

The reason often given by young girls for preferring monotonous work in an office to being at school is that they like to have some

¹ A paper read before the Educational Science Section of the British Association at Manchester, September 1915.

money of their own. Might not this natural and proper feeling be developed into a courageous facing of the possibility of depending entirely upon their own earnings, and even of being able some day to help others? Could it not be impressed upon them that a woman is a labourer worthy of her hire, and that if she puts her whole strength and time and capacity into her work, her earnings should be enough to keep her fit for that work? Circumstances may make it difficult in some cases for girls to equip themselves thoroughly for the career they have chosen before starting upon it, but if their attitude towards the question is right, they will in time overcome the difficulties and repair omissions.

Another reason why girls should be encouraged to look at the question in this light is the fact that the prospect of partial reliance upon others undoubtedly makes them satisfied with poor qualifications, incomplete equipment, and consequently meagre salary. If the ideal of ultimate dependence upon their own efforts were held up to them in their school years, they might come to realise the necessity of starting properly equipped on some path which would lead them to that goal, and would not be satisfied with mere "blind alley" work.

Again, education should make a girl unwilling to take up an occupation which does not open out any prospect of development of her powers. The mere "van-boy" existence provided by mechanical office work should not content any girl who has been educated in a secondary school. And here it is to be noted that mere permanency of employment is not to be confounded with a career, although many girls, and still more so their parents, seem to regard them as one and the same thing. Unless new demands are to be made upon a woman's capacity and enlarged responsibilities are to come to her as time goes on, the certainty of continuous employment at mere routine work becomes an added evil. A girl has not even the stimulus of having to fit herself for a new and possibly different kind of post should she fall out of the one she is in.

With regard to the second point, it is disappointing to find how large a number of women and girls imagine that the question of what salary they should accept is one between themselves and their employers and concerns no one else at all. They do not understand that by accepting a salary which is not and never will be sufficient to support them in the way to which they have been accustomed they are helping to lower the standard for all their fellow-workers, the majority of whom have probably no other means of support.

They should be taught as part of their education that the workers in every profession or craft have the right to expect that newcomers into that profession or craft will not only reach a certain standard of efficiency, but will claim the price for their labour which the accumulated experience of the whole body has shown to be just. If this could be made clear to girls during their period of training, the indifference to questions which vitally concern women engaged in this occupation now so often met with might be replaced by keen co-operation with their fellow-workers in the study of these questions, and in helping to solve the many problems peculiar to their calling.

With regard to specialised instruction, the fact that strikes one first is that, while in the case of nearly all other callings a girl can get more or less public guidance as to the best method of preparing for her career, in the case of clerical work no such guidance is forthcoming. For teachers in their several grades definite courses of preparation and training are laid down; the woman who wishes to become a nurse is not left in the dark as to what will be required of her or how to fit herself for her duties; for the sanitary inspector diplomas are prescribed; for the craftswoman, in whatever branch, a certain time of apprenticeship is marked out in which she will be taught all the technique of her trade. But for the woman or girl who wishes to take up secretarial work no diplomas are prescribed, no standard of qualification is set up, and no advice, except that given in the advertisements of proprietary institutions, is available. If a girl is so fortunate as to be in a school in which a secretarial or commercial course is arranged for, she will avail herself of its help. But these courses are not in any way standardised; moreover, they are not open to those who have left school, and not always to girls coming from other schools. In view of the fact that women and girls are now crowding into clerical work all over the country, and that their numbers are likely to increase rather than diminish in the future, it would be well if educational authorities could give a little more attention to this matter.

Long experience indicates that there are strong reasons why specialised instruction of this nature should not begin too early. Clerical work in most of its varieties is of an abstract nature; its meaning and value are not self-evident, and it does not, like a craft, awaken and develop the creative instincts. Unless a girl has had time to lay the foundations of a good general education she will not understand the significance of what she is doing, or learn anything from it which will

contribute to the growth of her mind. Instead of being a useful training for better work in the future, it will become to her more or less meaningless drudgery. After a year or two of such work a girl appears to become actually less intelligent and loses much of the keenness and brightness she showed during her school years, and the intellectual curiosity to which Mrs. Sidgwick referred in her opening address. Sooner or later she reaches a point at which no further development seems possible. As to the effect upon both mind and body of doing mere routine work for ten, fifteen, or twenty years, there is no doubt that if parents could foresee it, they would not be so ready to allow their young daughters to take up posts that offered no other prospect. The narrowness of outlook, the lack of interest, the bitterness and the general joylessness which such work tends to foster, to say nothing of its being the cause of many cases of neuritis and other forms of nervous breakdown, make those of us who know these things by experience feel that it is only right to sound a note of warning.

On the other hand, the girl who continues her education longer is much better able to appreciate the significance of the tasks allotted to her: she will be more likely to understand the relation of office work to the conduct of business generally, and the part which it must play in public administration. She will be in a position to learn something from all she does, and so will be preparing herself for more responsible tasks as time goes on.

In conclusion, I desire to offer a few suggestions as to subjects which should find a place in specialised instruction. Here, again, I speak from experience of the directions in which weak points have most often been observed.

Elementary economics I would place first of all, for the reasons already stated. The keeping of accounts and the reasons why they must be kept. The value of accurate records. Geography on modern principles. The reading of good newspapers and journals (and one would like to add reading aloud, for the reason that in clerical work of almost every description a good deal of reading aloud must be done in order to check the accuracy of the work, and life is so much more endurable when this reading is well done).

As to the question where instruction should be given, it is clear that the general principles which I have endeavoured to set out could only be inculcated in a school or college in which the tone was good and the best forms of discipline maintained. It is only in such a college that the physical well-being of the girls can be properly cared for, and facilities

for games and exercise available. They need to be taught how to take due care of their health, especially in view of the sedentary occupation which they contemplate. There is a great deal of sickness among quite young women clerks which could undoubtedly be prevented if they knew and observed the laws of health in regard to food, clothing, and exercise. May we not hope that the time will come when business men will recognise the help they receive from their women assistants and will think it worth while to provide a college where women may learn to be as efficient as possible in this particular work?

The proceedings of yesterday¹ encourage us to hope that this may be so. The existence of such a college carried on by a public body with definite educational ends could not fail to react favourably upon the whole body of workers. At present, as I have shown, the tendency is for women engaged in this work not to take themselves or their work seriously. The provision of efficient public training would convince them that other people did so, and would help them to do the same.

THE EDUCATION OF GIRLS FOR PROFESSIONAL LIFE.²

By Mrs. W. L. COURTNEY.

IT is necessary to differentiate between:—
I. Professions with a fixed course of training, for which a university education is a necessary preliminary (*e.g.*, medicine, teaching).

II. Professions for which girls cannot train until they are nineteen or more (*e.g.*, nursing, social work, higher grades of Civil Service).

III. Occupations which can be begun at an early age (*e.g.*, secretarial and clerical work, journalism, lower grades of Civil Service).

Class I. need not here be considered further, because the school curriculum for these girls must necessarily be guided entirely by the requirements of the universities.

Class II. includes two different types of professions. For some (*e.g.*, nursing) a university course is irrelevant; for others (*e.g.*, social work, Civil Service) it is eminently desirable, if the age at which wage-earning must be begun can be deferred until 22-24. But the school curriculum will not need any special adaptation for either type. The nurse will be the better for a good general education, and would not in any case begin her vocational training at school. The social worker or aspirant to the public service, if she cannot afford the very desirable university

¹ The opening of a college for training Kindergarten teachers, to which business men have generously contributed.

² Abstract of a paper read before the Educational Science Section of the British Association at Manchester, September, 1915.

course, will take her Settlement, or other sociological training, from about the age of nineteen, and need not begin at school.

Class III. is the group immediately concerning us. Here there are two rival views:—

1. That vocational training should begin at fifteen or sixteen, either (i) during the last school year, or (ii) at a special school or commercial college.

2. That vocational training should in no case begin before seventeen, and preferably should be deferred until eighteen. Those who hold this view advocate its non-inclusion in the curriculum of the secondary school.

The arguments in favour of (1) are: (a) that it ensures the girl remaining longer at school; (b) that it thereby strengthens her character and improves her health; (c) that, while ensuring her these advantages, it turns her out equally proficient in technical subjects. This is frequently disputed.

The arguments against (1) are (a) that the time spent on vocational training is subtracted from the ordinary school hours and therefore curtails general education; (b) that the girl so trained is not as proficient as the pupil of the special school.

The arguments in favour of (2) are obvious. It ensures better general education and defers the vocational education to an age when the mind is more mature and the technical qualifications are therefore more rapidly and more effectively acquired.

The arguments against (2) are: (a) that it defers the beginning of wage-earning to an age which many middle-class parents cannot afford; (b) that the employer prefers his assistants to begin young. This is again a very disputable point.

It is clear that the only person who certainly gains by the girl beginning young is the parent. The girl does not gain, for she feels the strain of work more severely, and chafes more against the long hours and confinement. And the employer's gain is illusive, for though the girl may be more amenable, she is less intelligent and attentive at sixteen than at eighteen, and in the long run probably of less use.

But if the girl is not to begin wage-earning work at sixteen, but is to wait until eighteen, where should she spend the years sixteen to eighteen? I answer, at school if possible, receiving a *good general education*. But if wage-earning at eighteen or earlier is indispensable, then from sixteen to seventeen at school, and from seventeen to seventeen and a half or eighteen at a secretarial or business training school, carefully selected. I do not believe in the possibility of getting more than the first rudiments of business training at

school, because it is impossible to create there the business atmosphere. And though the "hustle" of the crammer is as bad in its way as the ordinary school's absence of business atmosphere, there is something between the two, and that "something" is what the ordinary business employer regards as indispensable. It consists in a short training conducted, as far as possible, in classes pervaded by a business spirit, by persons who have been themselves in business and professional life, and understand its requirements as no educationist can understand them. It is a question of atmosphere, not of subjects. The better the general education, the shorter can be this period of special training. But it makes the pupil alert, business-like, and methodical, and is her best answer to the employer, who always seeks, if he can, a girl "with previous experience," thus placing serious difficulties in the path of the beginner. It will be very hard to persuade him that a girl, merely school-trained and not specially trained, has any equivalent at all to this "previous experience." And the more he can be persuaded to raise the standard of his requirements, the greater chance there is of raising generally the level of secretarial and clerical work, until it is worthy to rank as a profession, not an occupation, and of relegating to other employments the mass of ill-trained clerical workers, who at present degrade this and kindred branches of employment and bring down the rate of wages.

THE RELATION OF EDUCATION TO INDUSTRY.¹

By the Right Hon. Sir WILLIAM MATHER, LL.D.

AT the last meeting of the British Association in Manchester, in 1887, the president, Sir Henry Roscoe, in his opening address, referred to national education with patriotic candour, in the following prophetic sentence: "The country is beginning to see that if she is to maintain her own commercial and industrial supremacy the education of the people from top to bottom must be carried out on new lines. The question as to how this can be most safely and securely accomplished is one of transcendent national importance, and the statesman who solves this educational problem will earn the gratitude of generations yet to come." At the same meeting I was permitted to read a paper dealing with these "new lines," beginning at the bottom by suggesting "manual training as a main feature in national education."

A generation has passed since Sir Henry

¹ Abridged from a paper read before the Educational Science Section of the British Association, Manchester, 01 September 11th, 1915.

Roscoe uttered his prophecy, and still our national education is, though improved, far from being carried out on the principles and methods which will ensure our industrial supremacy. In other words, "the statesman" has not yet appeared!

On this occasion the subject I have been invited to introduce is "The Relation of Education to Industry." This relationship, viewed in the largest sense of the words, is evidently as close as that of soul to body. In all human industries the body is the instrument, but it is the spirit within that inspires, directs, ennobles, dignifies, and vivifies the activities of the body. Through true education alone can the spirit acquire the knowledge and power to move the body to display its highest efficiency for work and service during a healthy and active life. At the period of the last meeting of the British Association in Manchester, our national education was miserably inadequate for this purpose. By national education we mean, of course, the education of the whole people, not of a class only. For the leisured classes and the well-to-do, costly facilities for a certain sort of culture have been available from early times.

For the masses of the people, only so recently as 1872 did Parliament enact the first Public Elementary Education Act. From 1872 until as late as 1889 no attempt was made by Government to provide secondary and technical education in continuation of the elementary stage, and in consequence of this the progress made in scientific knowledge bearing on industry and commerce was withheld from our own people who most needed it, and left to other nations who were better qualified to reap the advantage. The results, it is well known, have been lamentable, for it so happened that it was during this very period that the most remarkable discoveries and development in science were revealed to the world, and their practical application demonstrated. During that period and indeed long before, notably in Faraday's lifetime, England produced some of the most eminent men of science of the world, who opened out to us the immeasurable possibilities of adding to the material wealth and prosperity of our country by the adoption of their discoveries.

Only two countries, however, were ready to take practical advantage of these discoveries owing to their widespread facilities for education, ranging through the elementary to secondary and technical schools up to scientific teaching in the universities. These countries were America and Germany.

Consequently the great discoveries relating to the utilisation of those subtle forces of electricity and magnetism achieved their first

triumphs in these two countries, where the spirit of education had long before penetrated the lives of the people and prepared them to adopt and apply the new revelations of science to the common needs of human life.

These great movements stirred our Government at last to send out a Royal Commission to investigate the educational facilities in the secondary and technical schools of foreign countries. Oh, the pity of it! That a country which had enjoyed the greatest opportunities for the application of scientific discoveries and methods to industry through the undisturbed monopoly of engineering, chemical and other industries extending over a full century, should have neglected the only means of retaining that position by the adoption, during the years of expanding wealth and prosperity, of a system of universal, free, and enlightened education open to every class throughout the land! Well might Wordsworth exclaim:—

O for the coming of that glorious time,
When, prizing knowledge as her noblest wealth
And best protection, this imperial realm,
While she exacts allegiance, shall admit
An obligation, on her part, to *teach*
Them who are born to serve her and obey.

Well, the glorious time has yet to develop! It has begun and has made some progress. The reports brought back from Europe by the Royal Commission, and one from America, written by myself after eight months' investigation, spread alarm throughout the United Kingdom and the British Empire.

These reports were published in 1884. No action was taken by Parliament until 1889, when happily a Technical Instruction Act was passed, within two days of the close of the session, but almost by a fluke even then, owing to the efforts of a few desperate men on both sides of the House who believed that "through lack of knowledge the people perish."

The following year the "whisky and beer tax" was ear-marked for the support of technical education, which resulted in numerous fine institutions being erected in many parts of the country. In 1902 secondary education was adopted permissively in a new Elementary Education Act, and though not adequate to meet the wants of the country, it was received with thanks for small mercies owing to the fact—which in some other countries would have been foreseen—that no system of thorough technical education can be carried out where secondary education is a missing link, so that for a time our national system of public elementary and technical education minus the secondary was more like "a rope of sand than a chain of welded links."

Secondary Education.

In 1887 there was no recognition of, and no grant for, secondary education. Of course, without an efficient system of day secondary education leading up to technical schools and higher schools of science, most of the money spent on the latter by the Government and municipalities was wasted. This fact, however, did not seem to weigh seriously with the Government and Parliament for some time after the passing of the Technical Instruction Act. But agitation resulted in the day secondary schools being brought within the scope of the New Elementary Education Act passed in 1902, and local authorities were required to establish and maintain such schools. In 1912 there had been provided 1,907 day secondary schools pronounced efficient by the Board of Education, of which 995 were aided by public grants, and in many of these the provision of free places to scholars from elementary schools was made obligatory. These schools in 1912 were attended by 185,000 pupils. The Government grants in 1912 to secondary schools in England alone amounted to £597,740.

It would be well to keep in our memories the one bright feature in our educational record, that the voluntary work done for education in Great Britain exceeds that done in any other country in the world.

A general survey of our present equipment for national education would clearly show that we are still far below the standard our industries require if they are to compete successfully with those of other countries; therefore the most reactionary form of economy during the war would be the reduction of Government grants to education of any grade.

It would be noted also that no provision has yet been made to continue the education begun in the elementary schools through the period of adolescence—the impressionable period for good or evil—in the life of our young people who at fourteen years of age must begin to earn something towards their own cost of living. Each year something like 600,000 of these young people leave the elementary schools, forming a population of about two millions of young people, from fourteen to seventeen years of age, a prey to many evil influences, and comparatively few of them are accounted for in the attendances at the evening schools. Special provision for them has not yet been made, nor has any definite system of continuation schools for the manual worker yet been established; consequently the expenditure on public elementary education is largely wasted, and the mental, moral, and physical training of the children of the nation is suddenly arrested at fourteen years of age.

This link in the chain of education is so vitally important from the industrial point of view alone that it should be dealt with without delay by a special committee of industrial and educational experts; for after this war more than ever shall we need to use every advantage that the highest education can confer upon our people in order to utilise the ample material resources of all kinds which we possess, if we wish to maintain our place in the world of industry and commerce.

It must not be overlooked, however, that no system of continuation schools will ever provide the best results unless it is based upon a scheme of sound elementary school teaching dealing with the child from early infancy.

The spirit of education must be within those who would teach children. It means much more than the routine subjects of the present school life. The ground work of all education must be the formation of character and conduct during the plastic conditions of early youth; so that good and evil, right and wrong, truth and falsehood, diligence and indolence, thoughtfulness and levity, courage and cowardice, the dignity of doing things well instead of badly, may be differentiated, and the attainment of the best become part of the motive power of the young.

The qualities of reverence, kindness, self-denial, sympathy, patience, self-discipline and self-education must be understood and acquired, and the road of true life made clear to the uninformed mind. We need the ethics of the Boy Scout institution in our public elementary school teaching and life.

We must never forget that we shall always have manual working classes, and the right training of such classes is of supreme importance to the nation. They form the very foundation of our country's well-being and prosperity, its social order and its moral worth.

Education in all grades must have its spiritual and moral side, as well as its physical and material value, made obvious and impressive. The period of education should be made the happiest time of life, by the culture of the best part of the inherited nature of children. Then the best results will surely follow and be shown in work and service for our common country.

At this point I will venture to express a doubt as to the efficiency in administration of our national education system at the top, either for initiation or control. A Department of Education, with a Cabinet Minister as president, assisted by a permanent Secretary of Education and a vast number of inspectors and examiners and Civil Service clerks is, in my opinion, unsuitable for our country, as well as extremely uneconomical.

A bureaucratic spirit creeps into such a Department, without any one person being specially to blame, and such a spirit is the obstacle to enlightened progress.

The freedom and responsibilities of local administrative authorities, acting through competent directors of education and committees composed largely of the best and most enlightened in the community as co-opted members, may be, and in fact are, frequently impaired or destroyed altogether.

The glaring inconsistency of the Board of Education, as at present constituted, lies in the political necessity of changing the president at every change of Government. The education of the people of the nation is a subject too sacred to be rendered liable to the whims and caprices of party politics.

A small salaried Council or Royal Commission of Education, appointed by Parliament *from the best men the country possesses*, regardless of party, each retiring at fixed periods, but eligible for re-appointment, would suffice to represent the State in all respects, while ensuring the continuity of principles and methods of progressive education.

The local authorities, under such conditions, would undertake larger responsibilities with greater freedom, and higher educational efficiency would be assured throughout their respective areas of administration.

One's mind naturally associates the desire for true education chiefly with the industrial classes, and especially so in these times, when under the terrible stress and strain of a vast war the real qualities of men and things are disclosed. There have been some scenes of discontent amongst workpeople, and an apparent lack of patriotism in this most critical time of our history, which might easily have led to our defeat and ruin as a nation. But things are not always what they seem. We have had evidence of discontent periodically in all industries at all times. It is obvious that a more thorough and enlightened system of education such as we have been considering would in the course of years render the relations between employer and employed totally free from the troubles we have had and must have from time to time under present conditions.

Where there is no true vision the people perish. Without the desire to learn, to know, to see and trust to a better way than that of recurring strife, the people deserve to perish. We must have visions in relation to industrial peace such as we visionaries hold in relation to international peace. After this Armageddon has been fought out and the victory won by those who fight for truth, justice, and right, against what appears to be the frantic force

of evil doers, we must resolve to start again on a higher plane of industrial relationship, in the attainment of which education on the lines already indicated must necessarily be the leading factor.

No country in this world can so easily change the moral and mental growth of its children from the wrong direction to the right as Great Britain can. We possess absolute political freedom, the poorest of the poor amongst us casting as potent a vote under our self-governing constitution as the richest magnate in the land. With the political freedom and individual responsibility such as we enjoy, perfect discipline must ensue if we become educated scientifically to do the necessary thing in the right way, for the welfare of the country and of all who dwell therein.

If liberty and self-government by the people for the people do not yield this result, it is obvious that we are not efficiently educated; that is, we are either not intelligent enough to know the right way from the wrong, or, knowing it, we do not care to follow it; which means that our moral nature, or higher self of spirit and conscience, has not become educated equally with our intellectual abilities.

We see a striking proof of this one-sided education and its awful consequences revealed during this gigantic war in the deeds of our enemy; and yet these people have possessed and been instructed in for many years from top to bottom the greatest educational system the world has ever seen. Education carried on under conditions which exclude true liberty and moral culture can only result in producing a nation bent on self-glorification, aggrandisement, and aggression, although it may be for a time accompanied by a remarkable expansion of industrial and commercial enterprise. "Live and let live" has been our maxim. We are slowly developing our educational ideals to the end that the fullest opportunities should be given to all classes of our people from top to bottom to acquire what Huxley termed "a splendid and noble education" in the arts and sciences, to apply them throughout our vast Empire and for the benefit of the whole world.

Practical Field Botany. By A. R. Horwood. xvi + 193 pp. (Griffin.) 5s. net.—In this book the author gives detailed directions for collecting, recording, and preserving plant specimens, with the object of extending the nature-study of schools to useful work in plant ecology. Curators of public and school museums would be well advised to study carefully the sections dealing with various methods of displaying fresh and preserved plants, work on which Mr. Horwood is an expert. Some fifty pages are devoted to a very useful outline of plant associations, with lists of characteristic species. The book is attractively got-up and illustrated, and is interesting and helpful throughout.

THE MILITARY TRAINING OF YOUTH IN SCHOOLS.¹

A REVIEW OF SYSTEMS OF TRAINING IN THE BRITISH EMPIRE AND IN VARIOUS FOREIGN COUNTRIES.

By A. B. Wood, M.Sc.(Vict.).

(Continued from p. 368.)

II.

EUROPEAN COUNTRIES.

Sweden.—Compulsory military training was introduced into Swedish schools about fifty years ago in connection with the rifle-volunteer movement which then began to make progress. About ten years ago the military exercises were altered to rifle-practice, *i.e.*, the training concentrated more upon shooting than upon ordinary military drill. Rifle-practice is not given in elementary schools, excepting those in Stockholm. It is compulsory, however, in all public secondary schools (*die deutschen Gymnasien*), the age-limits of training being fifteen to eighteen. In Sweden there are only a few private secondary schools, and in *some* but not all of these instruction in rifle-practice is given. Moreover, it is given in technical schools of secondary type and in training schools for teachers.

As this military training forms part of the ordinary course of secondary education the Government pays the bill, a sum of 50,000 Swedish crowns being granted annually to supply rifles, ammunition, ranges, etc.

The boys devote sixty hours yearly to rifle-practice, this time being distributed over the first fifteen week-days of every school year during the last four years of the course (*i.e.*, from fifteen to eighteen years of age inclusive). Four hours each day, on these prescribed days, are spent in military exercises, the remainder of the day being occupied with ordinary school work.

Instruction is given by special instructors appointed by the Secretary of State for War. In general, they are the teachers of gymnastics of the respective schools. These gymnastic instructors are in most cases men on the Active Service list. A Swedish authority considers that the training has produced an undisputed beneficial effect on the boys, and has made them well fitted for their subsequent military training in the Swedish Army.

Norway.—Military training in the form of what might be called professional drill is not given in Norwegian schools. Gymnastics based on the Swedish system, modified to suit the nature and character of youth, is a compulsory subject in all secondary schools and

in elementary schools in towns; a new law is in preparation that will also make gymnastics compulsory in the country schools. The special training in gymnastics contains elements of military exercises, marching, shooting, etc. A few historical facts may be interesting. In secondary schools gymnastics were introduced into the curriculum as early as 1809, but for many years the subject was rather neglected. The "School-Law" of 1869 signifies a more vigorous organisation of gymnastics, the ordinary time allotted to the subject being three hours weekly. Further, a week each year was given to military training proper. There was, however, no general satisfaction with the results of the latter, and it ceased by degrees. The "School-Law" of 1896 gave additional prominence to gymnastics in *secondary schools*. The number of hours was increased to four weekly for all boys between the ages of fifteen and eighteen (inclusive), and the subject was made obligatory at the leaving examinations and ranked in weight beside the oral subjects. An additional law some years ago further enacted that six hours every week should be employed for bodily exercises, *e.g.*, swimming, marching, games, rifle-shooting, etc. Matches are organised and conducted by a committee appointed by the Defence Department, and consisting of officers, members of the general rifle association, and leading schoolmasters.

As regards *elementary schools*, in 1889 a law, organising elementary education on new lines, enacted that instruction in gymnastics in a limited degree—as a rule, two hours weekly—should be given in the town schools. A Government Bill of this year extends this to country schools also. Rifle-practice is not compulsory, but is no doubt practised in voluntary courses. Apart from State compulsion, rifle-practice is very popular with the youth of Norway, and is encouraged by the Government with large grants. All expenses for gymnastics, teachers' salaries, material and equipment form part of the ordinary education budget. The instruction in gymnastics and shooting is given partly by officers, partly by the ordinary staff of teachers. The latter are trained in a special normal school, originally established to train instructors for soldiers, and more lately opened to school teachers.

The results of the training in gymnastics and shooting are unanimously considered very beneficial to the individual boy both as regards physical development and discipline, and are also appreciated as a very good preparation for the military service of the conscript.

Switzerland.—In 1907 the old Swiss military organisation came to an end. The *new* system prescribed compulsory instruction in gym-

¹ A paper read before the Section of Educational Science of the British Association at Manchester on September 9th, 1915.

nastics (*i.e.*, physical exercises) for all boys in elementary schools. Such instruction was to be given by the ordinary teachers, who should have undergone a special course of physical training in preparation for such work. In addition to this the State was to encourage the formation of clubs and institutions for the physical training of youth, by making liberal grants towards their maintenance. Regulations which came into force in 1910 dealt chiefly with the nature of the gymnastic instruction to be given in schools, as well as a consideration of the instruction to be given to teachers of gymnastics. With regard to the military instruction of youths who have left the elementary school the regulations give a choice between—

(a) Voluntary courses *without* arms (gymnastic instruction).

(b) Voluntary courses *with* arms (rifle and small gun).

(c) Voluntary rifle-practice.

These three voluntary courses are quite independent. Course (a), gymnastic instruction, is arranged for youths between the ages of sixteen and twenty inclusive. Courses (b) and (c), involving the use of arms, for youths from the age of eighteen to the time of entry into the regular conscript army. Thus, the system of military training in Switzerland is entirely voluntary up to the age at which a youth is compelled to join the army.

It is scarcely necessary to describe in detail the systems of military training in the other Continental countries, as these systems are very similar to that just described for Switzerland. In *Germany* and *France* ordinary gymnastic instruction, including simple marching exercises, games, etc., is given in all schools, elementary and secondary, but no *compulsory* military training proper is introduced. The Governments of these countries, however, give all encouragement in the way of liberal grants to voluntary organisations which provide physical exercises and rifle-practice for the youth of the country, but until the youths attain the age for entry into the conscript army no compulsion is applied. So far as I am aware the same may be said of *Italy* and *Austria-Hungary*, in which cases also no compulsion is evident before the conscript age is reached.

Generally speaking, it may be said when referring to Continental countries, that all military matters are left to the conscript period; any efforts other than this are initiated voluntarily and carried on with Government aid in the form of grants and material.

We now come to the case of our own country. Up to the present, *all* military training has been conducted on purely voluntary lines. We are in an exceptional military position,

and we have adopted correspondingly exceptional means of providing men for our army.

Cadet corps were started in 1860, about fifty-five years ago, in one or two of our old public schools. The system has spread rapidly with the most satisfactory results, as exemplified in the large number of men from our large schools and universities joining the New Armies.

Boys' Brigades, originated about 1883, combining religious training with simple military drill, have also been a marked success. The Boy Scouts' Association is another example of the success of voluntary effort. Here no military or religious training, as such, is given, but a special appeal is made to the spirit of adventure and the desire of the youth of our country to render social service; again, it appeals more to boys who dislike the irksomeness of steady military drill. In 1906 Haldane's Territorial Forces Act was passed. The Bill included a proposition for the compulsory military training of boys at school, but this part was rejected owing to strong opposition. After this time cadet corps in secondary schools received a strong impetus, and large numbers of battalions were formed throughout the country.

It cannot be denied that this voluntary system has met with great success in the schools which have adopted it, but these comprise a *very* small part of the male youth of Great Britain over fourteen years of age. However, it is important to examine whether or not a system similar to that in operation in Australia, for example, would be more satisfactory.

This paper has been confined rigidly to reporting the practices prevailing in various countries. I have not attempted to analyse the motives which have induced Governments to introduce these practices. Such motives exercised little influence on this country until the outbreak of the war, but are now influencing the minds and consciences of people in all ranks of society in Great Britain. Such a study goes beyond the purpose of my paper, but I may conclude by noting a few of the chief questions which call for answer:—

(1) The right of the State to exercise compulsion over the physical and military training of the male sex.

(2) Granting this right, at what age should this training commence?

(3) If the State imposes physical or military training on boys attending school, ought it not to impose it equally on boys who have left school?

(4) Assuming the right of the State to exercise compulsion up to the age of eighteen, can alternative provision be made for those who

are medically unfit for military service or have conscientious objections to bearing arms?

In conclusion, I should like to express my sincere thanks to Prof. J. J. Findlay for his invaluable help and for suggesting to me the investigation of so interesting a subject.

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(c) Australia and the Universal Training Law. Lieut.-Col. J. G. Legge, C.M.G. (*Army Review*, vol. iv., January, 1913.)

(d) The Defence Act, 1903-1912, and Statutory Rules, 1913. No. 327—Regulations under the Defence Act, 1903-12.

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(b) Official Year Book, 1914. Sect. vii., Defence. Pp. 207, etc., 260, 261.

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(ii) Report on Sec. Ed., 1913.

(iii) Defence Forces for N.Z., pp. 8 and 9, Report for 1913.

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V. *Sweden*.—Notes by Mr. Carl Enemaro. Swedish publication.

VI. *Norway*.—Notes by Dr. Otto Anderssen. Norwegian publication.

VII. *Switzerland and other Continental Countries*.—"Erziehung zur Wehrpflicht," K. Fisch, head of Swiss Military Department.

VIII.—*England and U.S.A.*—Numerous references contained in more complete lists.

(i) *A First Latin Grammar*. (ii) *A Latin Syntax*. By Prof. E. A. Sonnenschein. (Clarendon Press.) 1s. 6d. each. Prof. Sonnenschein's "New Latin Grammar" we welcomed in these columns in July, 1913, and the book has already made a place for itself on the classical sides of our schools. We have here the same book bound up into two separate parts, accidence in one and syntax in another volume. It has been a good idea to publish them thus separately, for now those who do not wish to worry their classes with a book on syntax may give them the first volume by itself. It is important that beginners should have their Latin grammar presented to them in a reasonable way, and we recommend this volume to be used from the very start.

SCHOLARSHIPS AND BURSARIES FOR UNDERGRADUATES.

By G. F. DANIELL, B.Sc.

AT the Manchester meeting of the British Association Prof. Marcus Hartog presented a report¹ on the number, distribution, and values of scholarships held by undergraduates, and on supplementary funds available for cases of need. The committee charged with the inquiry issued a questionnaire in 1914, and replies were received from the leading colleges of the universities in the United Kingdom. So far as Oxford and Cambridge are concerned, it is clearly unusual for the scholars to meet the cost of undergraduate life without assistance from parents or friends, and in the cases where the student depends solely on the scholarships, the full advantages of academic life, particularly on the social side, must be out of reach. The fact that the inquiry did not extend to the benefits received from the Carnegie Fund or from local scholarships, somewhat weakens the force of the conclusions. The committee does well to advocate the removal of the restriction which operates in the National University of Ireland, that county or municipal scholarships are not tenable with full college scholarships.

Quite rightly the report emphasises the important national need to enlarge the social area from which is drawn the supply of the learned professions, and asks for elasticity and means of supplementing emoluments so as to ensure that this national function may be performed adequately. The aim of scholarships—to open the highest careers to the very best men, independent of lack of personal means—would be defeated by any system of loan funds, which convert the recipient into a money-seeker. Prof. Hartog pleaded for sponsorial benefactions, either personal or anonymous, to be left in the hands of the president or principal, to assist those who otherwise would be debarred from a full academic life, as is provided already in certain colleges. This mode of provision is well established in dissenting and Jewish theological seminaries, and seems to be the main constructive proposal contained in the report. The committee does not propose to pursue the matter further, as the Board of Education is now engaged on a wide inquiry which covers the ground.

While the action of the Board may be a good reason for the retirement of the committee, it obviously makes discussion of this problem of the higher rungs of the ladder all

¹ Report of a Committee appointed to inquire into and report on the number, distribution, and respective values of Scholarships, Exhibitions and Bursaries held by University students during their undergraduate course, and on funds private and open available for their augmentation.

the more desirable. The whole state of affairs makes it necessary, now more than ever, to envisage education as a national concern. It will then be clear that the *raison d'être* of scholarships is national efficiency, and that the task of charitable benevolence should be to look after the hard cases or exceptional instances for which general regulations cannot readily provide. Private philanthropy, also, can find an admirable field for its energies and money in the encouragement of new, experimental, and even luxurious departures in research and instruction; for private assistance can be risked in a manner difficult sometimes to justify when the money spent is from rates and taxes the incidence of which is most severe upon the poor. A statesman who seeks to organise the nation's human assets will recognise that the justification of scholarships is the advantage to the nation, and it may be to humanity, of giving the best opportunities to the most promising intellects. He will estimate the supply of university trained men and women needed for the work of the British Empire, and cannot fail to realise the importance of prolonging the average school life, of broadening the avenues to the university, of securing a full university course, and of encouraging research by those temperamentally and intellectually fit.

When one regards the evidence which Prof. Hartog and his colleagues on the British Association committee have collected (but not collated), the first glance reveals an absence of comprehensive forethought and system—the originators of our scholarship arrangements lacked the national view. We cannot blame the pious founder or even the modern municipality, but we shall ourselves be greatly to blame if we do not now envisage education, the highest quite as much as the most rudimentary, as a national concern, and organise on broad lines. We must then demand, in the nation's interest, a large provision of scholarships and bursaries for women, in addition to those now offered as an inducement to enter the teaching profession. We must not increase the number of free-placers, but supplement and strengthen the efficiency of our "scholarship systems" by providing scholarships for those who have reached the age of fourteen or fifteen in a secondary school, whether they have formerly been in a public elementary school or not. We must make the prolonged education more worth while by having better-paid teachers in the schools and better-paid demonstrators and assistant lecturers in the universities.

Some of our scholarships must include workshop training, by the sandwich system or otherwise, as found best by allied forces

of professors and manufacturers. Neglect of art and music must be no longer permitted—the achievement of the useful must be combined with the search for the beautiful. We shall need at least a leaven of university trained men and women to give inspiring non-vocational lessons to the part-timers who will fill our continuation schools, for all who leave the elementary school should be part-timers until seventeen, unless they are following a full-time educational course. On every side, at home and in the overseas dominions, the need for an army of highly and nobly trained men and women is apparent. The best training-ground for such is the university, and the provision of undergraduate scholarships and bursaries, their number, distribution, and respective values, need to be planned as viewed in relation to their imperial function.

ARTHUR FRANCIS LEACH.

ARTHUR LEACH was a great historian, just as Brabazon was a great painter. Both were amateurs, but as good as professional craftsmen. Brabazon painted landscape, and Leach routed among ancient documents, to please himself and to give play to his powers of mind. In following his bent, each man did master-work. Both had genius; and their genius burned with a brighter flame as life advanced. What Brabazon did for the art of English water-colour, Arthur Leach did for English historical studies in the thickets of medieval education. They imparted to their contemporary fellow-workers a new intensity of vision.

Leach gave a fresh perspective to English educational history. He taught us how to see continuity in the development of English schools. No other man has done for the study of medieval education in England what Leach did. We saw the long roll of school history unfolding itself from his hands. He lengthened the pedigree of many ancient foundations. To hear him talk was like being shown by Mr. Quinney pieces of pre-Reformation work in an oak livery cupboard, which one had believed to be no older than the later sixteenth century. And Quinney was no blunter than Leach.

Leach, like John Richard Green, had *flair*. His insight into medieval school records was magical. He divined things. It was as if the shade of a medieval monk stood at his side and pointed with spectral finger to significant things. Indeed, when Leach came, excited, from some discovery among ancient charters, he seemed for the moment a re-incarnation of some scribe of the Middle Ages.

Seen in its context, his work (I suppose) is part of a much larger movement in historical studies. Seeborn did for land tenure, Maitland for law, what Leach did for schools. They disclosed continuity in the process of growth in English institutions. They pushed back the pedigrees of certain members of our national corporate life. Leach was, perhaps, the last originative mind in a great school of historical diviners and interpreters. The records of medieval education in England had been waiting for a genius to illumine them. Leach came, and his light will guide the steps of the scholars who will carry his work further.

There were faults of temper in him which curtailed his influence. He had a jagged power which cut. No group of fellow-workers grew up around him. He had not the instinct for co-operation. Sir James Murray's gift of sympathetic comradeship, Sir Sidney Lee's organising capacity, were denied to Leach. Had he been different, he might have been the editor of a great national dictionary of educational history. I wonder whether the British Academy ever encouraged him to set on foot an enterprise in co-operative scholarship.

Leach told the truth as he saw it. This was his life-service to English historical research. And he would like his friends to tell the truth about him now. He had the divining power of a great archæologist. He made one think of Kipling's re-incarnated Greek sailor in "The Finest Story in the World." Yet there was an impatience in him, which made a fellow-student like myself, whose work lies in a much more recent part of the history of English education, wonder whether some of his work with the documents may not have been, at the critical, high-strung moment of discovery, a little too impetuous and slapdash. But of this I am incompetent to judge, as I have never been through the records which he put to such stimulating and illuminating use.

His work would have had much greater influence upon public opinion if he had had the same insight into the significance of the educational history of England since the Puritan Revolution as he had into the records of the centuries which went before it. But this he lacked. If he had possessed that wider range of re-creative vision, he would have founded a new school of thought in English educational history. As things are, he stamped his personality on one part of it—and he left behind him a ferment of the mind.

Perhaps these searchlights which Leach and other scholars of genius have turned on to our medieval history are prognostic. The war

will end an epoch. In the next great period of human experience, the world may find itself in a mood more akin to the temper of the Middle Ages than to the questioning hurry of the nineteenth century. If this guess be true, Leach will have for the next generation a message full of meanings, which his contemporaries could not take. And we, the students of modern educational history, will be archæologists delving in a past, chronologically nearer, but in truth more remote to our grandchildren than will be the England of chantries and guilds. M. E. SADLER.

PERSONAL PARAGRAPHS.

LIEUT. H. S. WILSON, of the 8th Worcestershire Regiment, who was killed in France on September 15th, was the son of Canon Wilson, of Worcester. Mr. Wilson was educated at Clifton and King's College, Cambridge, and was a master at Rugby School. He joined the Worcestershire Regiment as a private; he was soon given a commission and was appointed intelligence officer to the battalion.

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SEC. LIEUT. LESLIE EASTWOOD, of the 6th Royal Lincolnshire Regiment, who has died at Alexandria of wounds received in Gallipoli, was educated at Worcester College, Oxford, where he took his M.A. in 1913. He was a master at Oxford Preparatory School.

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THE death is reported of Lieut. C. H. Eyre, who received a commission in the new Army in September last year, went to France in Christmas week, and was attached to the King's Royal Rifle Corps. Mr. Eyre was educated at Harrow School and Pembroke College, Cambridge; he was a master at Elstree School, and in 1906 went to Harrow as a master.

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LIEUT. G. G. DOWNES, 6th Lincolnshire Regiment, who was wounded on August 9th at the Dardanelles and died of his wounds on board a hospital ship, was educated at Bushey and University College, Reading. He was a member of the O.T.C., in which he became a colour-sergeant. He took his degree in arts at London University, with honours, in 1911, and was for a short time a master at the Liverpool Collegiate School. In 1914 he gained an appointment under the Ministry of Education, Egypt; on the outbreak of war he applied for, and received, his commission in the 6th Lincolnshire Regiment.

LIEUT. E. L. WELLS, of the West Coast Wellington Regiment, New Zealand Expeditionary Force, who is reported from the Dardanelles as missing, was educated at Hastings Grammar School. He was for six years on the staff of Borlase School, Marlow, and in 1914 was appointed to a post at Wanganui School, New Zealand. The *A.M.A.* quotes from a letter from him, dated August 1st:—"I am sitting in a trench waiting for a Turk to pop his head over the parapet of the trench thirty yards away. . . . A copy of the *A.M.A.* would be a pleasant contrast to things in general here and would be welcome."

* * *

MR. L. I. PITT, of the King's Royal Rifle Corps, has been killed in action. Mr. Pitt was educated at the Coopers' Company's School, Bow, and graduated in science at London University in 1908; he became a master at Stamford School in 1909, and joined the I.A.A.M. in 1912.

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LIEUT. E. WORSNOP, 8th Battalion West Yorkshire Regiment, died of wounds at the Dardanelles in August. He was educated at Leeds Grammar School and Leeds University; he was for two and a half years a master at Bowdon College, Cheshire, and was then appointed to Hull Grammar School.

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MR. ERNEST HOLMES, who was for twenty years a master at Strand School, died on September 25th. Mr. Holmes took a keen interest in the whole life of the school; he was a successful housemaster, and a vice-president of the Old Strandians' Association; his happy good nature will be much missed by all those who attend the meetings of the association.

* * *

MAJOR FABIAN WARE has been invested by President Poincaré with the Croix de Chevalier of the Legion of Honour, "for distinguished service during campaign." Major Ware, who was formerly the editor of the *Morning Post*, was a keen educationist and a member of the I.A.A.M. in its early days; he then went to take up the direction and control of education in the Transvaal. His services in France have been with a unit of the Red Cross Society marking and registering the graves of fallen soldiers.

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MR. A. OLDROYD, of Holt School, Liverpool, has been appointed headmaster of the Secondary School, Heywood. Mr. Oldroyd was educated at Bradford Technical College, Liverpool University, and Owens College,

Manchester. He held masterships at Belle-Vue Secondary School, Bradford, at Grange Secondary School, Bradford, and at the Royal Technical Institute, Salford, before going to Holt in 1908.

* * *

MR. R. H. ALBERY, principal of the Technical School, Earlstown, has been appointed headmaster of Thorne Grammar School. Mr. Albery was educated at Liverpool Institute and Liverpool University; he was second master at the Municipal Secondary School, Warrington, from 1903 to 1911.

* * *

MR. J. S. FURLEY, one of the senior assistant masters of Winchester College, has retired. Mr. Furley was scholar at the College in 1867, and was housemaster from 1894 until 1909. He has served as Mayor of Winchester and chairman of the local Education Committee. From Winchester Mr. Furley proceeded to Christ Church, Oxford; he obtained a first class in Classical Moderations in 1876 and a first class in Lit. Hum. in 1878. He was appointed to a mastership at Tonbridge School in 1879, and became a master at Winchester in 1881.

ONLOOKER.

METHODS AND CONTENT OF HISTORY AS A SUBJECT OF SCHOOL STUDY.¹

By J. A. WHITE.

I PROPOSE to assume that we are agreed that a much wider knowledge of history is a necessary part of the education of our future manhood, and to confine myself to throwing out suggestions as to the manner in which this may be accomplished in the primary schools. It seems to me that we need to broaden the child's outlook in social, constitutional, and especially in general history.

The newer tendencies in history-teaching have already swept away much of the old committing to memory of lists of dates, battles, kings and queens, and the more or less unimportant details connected with great personages. This has probably resulted in such hazy conceptions of history in the child's mind that one may well feel justified in thinking that this has been a mistake; that the old methods did give us something definite, while the newer give us a nebulous quantity which amounts to nothing. There is much ground for this belief, and it is for those who believe in the wider outlook to justify their faith in the newer methods. On the other hand, there has possibly been a tendency in the more advanced schools unduly to emphasise the economic aspect of history. And while it is, of course, generally true

¹ A paper read before the Educational Science Section of the British Association at Manchester, September, 1915.

that, other things being equal, the power of economic endurance is the determining factor in most great events, what a tremendous assumption we make in that qualifying phrase "other things being equal."

But even when we avoid, on one hand, the burden of long lists of dates, battles, etc., and, on the other, an undue proportion of the economic aspect of history, the task of selection of suitable material to cover the three phases mentioned is sufficiently difficult. Three conditions appear to me to be essential in doing so:—

(i) The matter must be such as will appeal to the child, *i.e.* it must interest him; it must, more or less, be comprehensible to his immature mind; it must be possible to link it with his associations by comparison or contrast or by connection with present-day affairs.

(ii) It must have development as its cardinal feature. The lack of this was one of the great drawbacks in the older methods of historical instruction. Events were taught in isolation, with a consequent distaste for the subject. Moreover, it is the observance of this feature in history teaching which brings about in the child's mind the realisation of the fact that our institutions have grown out of the needs of the nation at different times, and that no institution exists which has not fulfilled a necessary function.

(iii) The third condition follows from what has already been said. The matter selected must be relative to modern conditions.

With these things in mind, it is possible to select material which will make a scheme suited, in the hands of a competent teacher, to the needs of a primary school. Let me indicate in each branch how the story might be constructed.

In general history we must, of course, keep to the broadest and most interesting events. Ancient history will consist more in descriptive matter than in attempts at historical development. The people who made the Euphrates-Tigris and the Nile basins the bases of their respective civilisations claim our first attention. Their habits and customs and their connection with each other through Palestine will be described. The Persians, too, will be treated somewhat in the same way. In passing on to Greece our outlook will be somewhat different. While giving due consideration to the geographical conditions of the eastern Mediterranean, we should dwell more on the personal side of Greek life, especially noting the great deeds of individual Greeks and the relations between the individual and the State. The Greek colonies and the Greek methods of colonisation would also be noticed, and the difference, in quite a simple way, between the Greek and the Asiatic view of life.

The alliance of Philip of Macedon with Hannibal in the Second Punic War brings us easily and naturally to the Roman era. The position of Rome and Carthage, the traditions which grew up in Rome, the extension and organisation of the Roman Empire, with the more obvious influences of Roman occupation on the spread of civilisation, come next in our programme. From the Roman Empire we come to the barbarian invasions and the establishment of Eastern Empire. The work of the Church claims

our attention next, together with the attempted revival of a Western empire under Charlemagne. The pacification of Charlemagne's three grandsons foreshadows the creation of modern France, Germany, Holland, Belgium, Switzerland, and Italy. And at this time we encounter the invasion of the heathen hordes—Danes, Norsemen, Moors, and Saracens—with the increasing power of the Church. This brings us to the Crusades, accompanied by the contests between Pope and Emperor together with the rise of France. Out of this grows the Renaissance and the invasion of the Turk, which in their turn lead up to the Reformation and the Age of Discovery. The newly-acquired importance of certain portions of the Empire (Holland and Spain), Portugal, and Britain is the obvious result. The contests between the French monarchs and the emperors leads us to the domination of Spain, the Thirty Years' War, and the ascendancy of France up to the time of Louis XIV. This brings Prussia and Russia into prominence and the century in which British colonisation was successfully carried forward, leading to Napoleonic times and the final supremacy of British sea-power. Napoleonic times, in their turn, bring us to the rise of Germany, leading to its unification with the unification of Italy. The extension of the influence of the Great Powers throughout the world and the "command of the sea" carry us to the present day.

Now I am aware of the many deficiencies, from the historical point of view, of this brief outline. Probably most students of history are dissatisfied with the schemes which they make for the purpose of giving some sort of an historical foundation as a necessary part of every child's education. This must be so. History is so vast a subject, the child's years at school in the best cases are so few, that it is impossible to satisfy ourselves in this respect. We can bring all kinds of arguments against the scheme. The main objections would perhaps be, first, that from the historical point of view it is much too superficial; and, secondly, that from the point of view of the child it is much too difficult. But neither of these objections moves me in the least. My answer to the first is:—(a) All the knowledge possessed by a child of thirteen or fourteen years is superficial; and (b) that to study a small period intensively cuts at the very root of sound historical teaching, *viz.* to create a sense that history is continuous and that our present-day conditions are growths, not accidents. To the second objection my reply would be that difficulty depends upon the way the teacher presents his subject. To give one simple proof of this, most of what has been outlined here can be taken in biographical form, which is said to be especially suitable for children—not that I approve of biographies entirely. This method errs in omitting the mass of the people just as, conversely, too much stress on economic factors errs in depreciating the power of the individual. So much, then, for these two main objections.

On the other hand, the scheme fulfils the conditions I mentioned. It does unquestionably appeal to the boys. It does retain development as its cardinal

feature. It does explain in a general way the relations of the great world Powers. But it also does something else. A careful examination of the outline will show that, right through, British history is a subsidiary constant. It therefore forms a recapitulatory course as well.

So much, then, for the content of the work in general history. In social history the work of selection is comparatively easy. Putting aside the influence of geographical environment, it is surely a platitude to say that people's lives, their habits and conditions, are determined largely by their occupations. Looking at English history as a whole, we may say that there are four great stages in the economic development of the country from the times of the Roman occupation. First, we have an agricultural country over-run by a mixed population. This mixed population settles down, and we get our next stage when sheep-farming plays such an important part. Then comes the third stage, when we get a sudden expansion in trade and commerce, followed by a rapid increase in the formation of large holdings of land. Finally, we get our fourth stage in the industrial revolution. Of all these stages there are abundant traces at the present time, so that our local history becomes particularly valuable. Where a teacher is well qualified in history he will embrace under these four heads food, dress, architecture, travelling, town life, wages, trade guilds, trade unions, and all that we commonly think of when we speak of social history.

Let me expand these heads slightly into an actual syllabus. The heads are as follows:—The mixture of the English peoples; manors; growth of free labour; bailiff farming; a wool country; towns; trade guilds and trade unions; increase in trade and commerce; trading companies; food supply and enclosures; the industrial revolution; factory Acts; compensation and insurance. I think it will be obvious from these headings that I need not elaborate my remark about the special value of local history here. The appeal to the child, therefore, is direct.

From social history let us pass to the *story* of our constitution. I wish to emphasise "story." Here we are concerned with getting a boy to realise how it happens that the electors possess what is called a vote, and what it means. In doing this we must see to it that he understands not only what he has to *get*, but also what he has to *give*. It is somewhat unfortunate that text-books almost universally emphasise the constant struggle in getting, without correspondingly emphasising what greater responsibilities were thereby incurred. An obvious starting point for our story is the work of the early Church, for it was through its influence that many of the severities of the feudal system were ameliorated. The kings' councils in these early days consisted, for obvious reasons, mainly of warriors. But as times became more settled the great ecclesiastics took an increasing share in these deliberations. So we get as our introductory portion William I. and Lanfranc; William II., Henry I., and Anselm; Henry II. and Becket; John and Stephen Langton. This brings us to Magna Carta and the means taken in 1258 to secure the carrying out of its provisions. The story of Parlia-

ment is then fairly continuous, commencing with De Montfort and coming down to the Parish Councils Act of 1888. Under seven or eight headings this story can be constructed in a simple, but none the less effective, form.

But there is, perhaps, a better way of approaching this subject—that is, by regarding it from the point of view of the growth of the personal and political freedom of the subject. We may take the great landmarks:—Coronation Charter of Henry I., Magna Carta, Petition of Right, Bill of Rights, Act of Settlement, Habeas Corpus Act, Reform Bill, Franchise Acts, County Councils Act, and Parish Councils Act. Their names alone suggest the line of development of English constitutional government. The connection of one with another is supplied easily by a competent history teacher; and even where there is no such teacher on the staff, the Historical Association has now supplied much help in this matter with its first cheap series of original documents, with the necessary elucidation and explanatory matter.

In my school the three courses of general, social, and constitutional history occupy the last year and a half or two years of the boys' school life; and in order to cover them, the time for history is, in the upper classes, about one hour forty-five minutes per week, as compared with one hour for the lower. The extra time is taken mainly from the reading, because a good deal of reading accompanies the historical instruction. The work is materially assisted, too, by the fact that the geography of the world is taken in Standard VI., and again in Standard VII., with special reference to the British Empire and the British Isles. The ideal way of taking the three history courses is to take them concurrently, but in practice it is found better to take them consecutively.

The complete course for the whole school is as follows:—For children from the age of 6+ to 8+ is selected a series of biographical stories chronologically arranged, mainly romantic in character, but having for their historical object the cultivation of the time-sense. From the age of 8+ to 10+ the children go through another series of stories, again often biographical, but framed mainly with the idea of illustrating the social conditions of different periods, and thus creating a sense of development. During these four years much consecutive knowledge is acquired of the various sovereigns, peoples, and periods with which the persons mentioned in the stories are connected.

After this is begun what might be termed the regular course of history. From 10+ to 11+ is covered an outline course which ends at the Spanish Armada, and from 11+ to 12+ the remainder of British history in outline dealing largely with the British Empire. Then follow the special courses with which I have dealt already.

The main condition for carrying out this work fully and successfully is the competence of the teacher. He must be competent both in the control and training of children and in his historical equipment. Still, much may be done with the resources already to hand. Possibly most of what is essential down to Roman times could be taken in the Scripture lessons, which

would gain in value by a treatment of their historical and geographical background. Then, in addition to simple general history of Britain, the social or constitutional or both courses might well be taken in schools which are well staffed. The general history, however, necessitates a competent historical teacher, as a text-book on such a wide area becomes a mere dry skeleton, and lessons prepared at the time tend to be overloaded with unessential details and are too limited in their scope.

With regard to the apparatus of history, one would like to say many things. If some education authority could be induced to fit up a history-room, or, better still, a combined history and geography room, in one of the central schools, I have no doubt that the results would be so valuable that these rooms would become the rule. However, that is by the way.

Among things that are essential is the "history line." This should always be in front of the class, and the position along the line at which the work has arrived should be indicated. In the upper standards each boy should make one for himself, which he should use at each lesson. This could be divided according to centuries or proportionately according to reigns, with the names of the sovereigns written along the top and the dates fixed at each dividing line. Different periods or movements might be indicated in various ways, *e.g.* by different coloured spaces or by different coloured dividing lines. The main items or leading characteristics of any movement could be written in the appropriate space. All this gives coherence to the work. But the history line must be used for one purpose, and one purpose only, *viz.* historical sequence. To use it for several purposes only tends to confusion.

Another essential is a good atlas. For this many conditions are required. Contoured maps are essential, and have appeared already. But contoured maps do not show, for example, the basis of the trade of the Hanseatic League or that of the Dutch and the Spaniards. Nor does the relief of the land so indicated always show the routes. Deserts, marshes, forests have their say in these matters, so also do climatic factors, *e.g.* in the case of ice-bound rivers. Contours may be, and sometimes are, in fact, misleading. At present the most useful maps are those in which the teacher himself fills in just the geographical data necessary for the interpretation of the historical events with which he is dealing. A plentiful supply of loose outline maps with main rivers inserted is a great help in the same direction. It ought to be possible to produce these at the price almost of the paper. There is already a good supply of outline maps both here and in America, many of them very cheap.

Then we come to pictures. These, of course, are of the greatest value, especially contemporary pictures. Composite pictures are of doubtful service, since they depend upon the historical competence of the person executing them; and while he may be a good artist, he may also be a bad historian. But there seems to be no reason why many genuine contemporary pictures should not be reproduced cheaply, and it ought to be possible to get artist and historian to co-operate for this purpose.

With regard to source books and original documents we need to exercise great care. Without adequate elucidation by the teacher or accompanying text they can be very misleading. The terms used mean different things at different times, standards of action and standards of value vary at different periods, and a competent teacher is needed to adjust these matters. The same circumstances are applicable also to literature. Quotations from contemporary writers under competent guidance are excellent for illustration and for stimulating interest, and a well-read teacher though somewhat deficient in historical training is often more successful in arousing the interest and enthusiasm of his class than one whose reading has been rather narrow, but who may, nevertheless, have covered a prescribed course. In English literature there is ample material for this purpose, although often second-rate work is more useful for illustrating the conditions of a given period than classical works of the first rank. The vexed question of the text-book also comes within the same category as original sources, etc. Text-books should be under the control of, and secondary to, the teacher's own course. Speaking from a personal point of view, I should like a whole series of cheap volumes written upon all kinds of historical topics by competent historians for children of thirteen or fourteen. The range being limited, the historian would be free to write in a simple and attractive way. It would then be possible to refer the children to these works for a deeper knowledge than is possible in the school course.

INDUSTRIAL FELLOWSHIPS.

EDUCATIONAL Pamphlet No. 30, recently issued by the Board of Education, contains a report by Mr. T. L. Humberstone, Mitchell student of the University of London, on the scheme for industrial fellowships inaugurated by the late Prof. Kennedy Duncan. In this scheme, adopted by certain universities in the United States, an attempt has been made to provide co-operation between the universities and manufacturers in the promotion of research. The report is of special interest at the present time in view of the recent Parliamentary paper on the organisation and development of scientific and industrial research, and the establishment of a Committee of the Privy Council, appointed to direct the application of any sums provided by Parliament for the purpose of research.

Mr. Humberstone visited the Universities of Kansas and Pittsburgh in 1913, and has supplemented his observations by later information obtained from America. The scheme has fructified in an industrial research department at Pittsburgh, which has led to the establishment of the Mellon Institute, donated by the brothers Mellon, of Pittsburgh. The University of Kansas abandoned Dr. Duncan's scheme soon after his resignation in 1913, and has replaced it by a small organisation known as the Division of State Chemical Research. In Dr. Duncan's scheme, a manufacturer desiring special information enters into an agreement with the university. The manufacturer provides a maintenance allowance to a fellow who is appointed

by the director of the institute, and in some cases an apparatus grant. The university provides laboratory and library facilities, and the manufacturer provides facilities for acquiring knowledge of present trade methods. The bulk of the researches completed or in progress deal with chemical industries.

For the most part the results of the researches are of a practical character, and are of direct commercial value resulting in patents or special processes, in the profits of which the fellow has a share under the agreement. During the progress of the researches light is thrown frequently on questions of purely scientific interest. Fellows have first completed their undergraduate course, and the influence of this trained body of men, enthusiastic as to the value of research, is an asset of considerable value to the university. The manufacturer is freed entirely from the responsibility of selecting the specialist best qualified to investigate his problems, and of supervising his work, and at the termination of the fellowship has the option of securing the permanent services of a man intimately acquainted with the science and practice of the problems in his particular industry. The advantages of the scheme to the fellow are obvious. He is in intimate contact with a manufacturing industry, and yet is free from the interference which working in a factory often implies. He is within easy reach of library facilities, and is able to consult colleagues among the industrial fellows, and to submit difficulties to the director, and he is training himself in the scientific aspects of some industry in which he may afterwards take a share at an adequate salary and with a recognised status. In this country we appear to be on the eve of much closer relations between colleges and factories, and we can commend the reading of the report to all who are interested in this development.

HISTORY AND CURRENT EVENTS.

WE referred last month to the various activities of the Pope in reference to the present war, or rather we may say to the various wars now in progress. As we reflect on the total failure of his endeavours to bring about peace, we are reminded of the times, now long ago, when the head of Western Christendom could speak with more authority. In the time of our Edward I. a pamphlet was written to revive the interest of Europe in what was then a dying cause, the recovery of the Holy Land from the Mahometans, and the author contemplated the possibility of diverting the energies of turbulent nobles from their mischief-making in Europe to the object, more profitable in his view, both for this world and the next, of extending the area of Christianity in the East. The Pope of those days thought he could still check war by his immediate authority, and, though the promulgation of the bull *Clericis laicos* led him into more trouble than he anticipated, the very attempt shows that, at the end of the thirteenth century, there was still a belief that Christendom was one, and that it was in reality a government of men.

THE financial side of the war is beyond the understanding of most of us. When expenditure rises to

millions a day, are there any of us who quite realise what the figures really mean? But with budgets not once a year as usual, but twice within that period, not even the most retiring of us can escape, even if we wished to, some idea of what war means in cost of money. Fifty years ago, the announcement of a new budget was a source of delight. In those "piping times of peace" we became accustomed to constant diminution of taxation, to promises of "a free breakfast table," and even, on one occasion, there was a programme in which the abolition of the income tax was a prominent item. That golden age has passed away, and we are tending towards the condition of affairs when we were fighting against Napoleon. Then, it is said, our grandfathers cheerfully bore with a taxation equal to one-fourth of their incomes; and that war lasted for twenty years, a burden on a nation not so rich as Great Britain is now.

WE are realising just now the intensity of feeling in the Balkan peninsula. The war, which we may regard as beginning with the murder of an Austrian archduke in the summer of last year (how long ago that seems, so crowded with events has been the period since!), has apparently now come round to the scenes of its origin, and Europe is beginning to see the result of diplomacy among the Greeks, the Bulgarians, and the Rumanians. We hoped some time ago for the union of all these with the enemies of the Central Powers; now we are less in doubt, and Bulgaria has "defied Russia." Do we realise the past history of these little but warlike peoples? Do we remember that each of them has had a great past, that there were times in which Greece, Serbia, Bulgaria respectively dominated the Balkan Peninsula, and that since that time they have groaned under the rule of the Turk and longed for, not only freedom, but the revival of their glorious past? Their respective aims are mutually incompatible, but it may yet be possible to persuade them to agree. But when?

IT has almost become a commonplace that this war has revealed to us the superficial nature of our civilisation, or, alternatively, that we seem to have gone back centuries in the methods of warfare. Modern science has, it is true, made possible weapons both of offence and defence which would have astonished and alarmed our fathers. War is now waged in the air and under the water, and methods of attack are used which have been rendered possible only by the increased knowledge of chemistry which has been the product of the last century. But in some respects there have been at least proposals to adopt certain devices which, until now, we regarded as curiosities in museums or pleasing illustrations in books with which to interest our pupils and help them to realise the methods of past centuries. Among these is the revival of defensive armour. Stone and other fortifications have been found useless against modern artillery, and earthworks are considered better protection for towns, and helmets and other personal wear have been adopted for protection against projectiles. So in some respects "history repeats itself."

ITEMS OF INTEREST.

GENERAL.

IN Jean Henri Fabre, who died recently at the great age of ninety-two years, France possessed one of the greatest students of insect-life the world has ever seen. Fabre, born in poverty and earning for himself and family a salary of £64 a year as a schoolmaster, "less," as he said, "than a groom in a well-to-do household," produced works on the habits of insects which stand by themselves, whether we consider them as science or literature. So long ago as 1871 Darwin, in his "Descent of Man," referred to Fabre as "that inimitable observer," and Maurice Maeterlinck happily named him "the Insects' Homer." In his "Souvenirs Entomologiques," Fabre recorded in ten volumes the results of fifty years of observation, study, and experiment on living insects of the south of France. In 1843, when eighteen years of age, he was appointed to take charge of a primary school at Carpentras, at a salary of £28 a year. He there met for the first time the black mason-bee which makes nests of clay on pebbles or a wall and fills them with honey. Réaumur dedicated one of his studies to this interesting insect, but Fabre did not then know of it. He spent a month's salary in the purchase of a standard work on insects, in this way providing food for the mind at the expense of food for the body. The entomological studies thus started, and further excited by reading a pamphlet by Dufour upon the habits of a wasp-like insect, a species of *Cerceris*, which feeds its progeny upon certain kinds of beetles, were continued by Fabre with unabated enthusiasm and conspicuous success. With supreme contempt for riches and remarkable indifference to worldly honours, he built up in his lifetime a more solid and durable monument than was ever made by hands.

MR. MORLEY DAINOW, whose name is familiar in connection with the movement towards the use of moving pictures in schools, is now in India with his regiment, the 9th Middlesex. He has not lost his interest either in schools or in the kinema, and with the help of Mr. Bulchand Karamchand, the superintendent of the Nava Vidyalaya High School at Hyderabad, has published suggestions on "The Use of the Kinematograph in Education." He appeals for a system of selecting the films which are provided for the entertainment of children in India, and suggests that each local government should appoint a kinematograph committee which should control the presentation of films to children, and should guide the film manufacturers in the production of suitable films. We learn, with astonishment, from Mr. Dainow's pamphlet, that *faked* films of German troops, German engagements, Turks preparing for war, camels laden with stones to block the Suez Canal, are being frequently shown in India. The authorities appear to take no action, and fail to provide films showing the work done by the Allies, and in particular by the Indian contingents. Mr. Dainow's opinion that the "nature of war films in India leaves much to be desired" is decidedly too mildly expressed.

THE University of London O.T.C., under the command of Lt.-Col. D. S. Capper, will begin its eighth year of training under exceptional conditions, as the colleges of the University are largely depleted of students. In the infantry unit, the largest in the contingent, the training since the outbreak of the war has been mainly of a continuous character, cadets being accommodated in premises near London. As a rule, a few months of training under these conditions have been sufficient to qualify cadets for commissions. The artillery and engineer units of the contingent are also in active training. Their work is especially important at the present time, as there are so few facilities for the training of technical officers. The artillery unit has been permitted to keep its guns and equipment for training purposes. In the medical schools of the University, a considerable number of students are completing their medical training with a view to taking commissions as soon as qualified. The strength and training of the medical unit of the University O.T.C. have therefore not been much affected by the war, and the cadets attended camp as usual.

SINCE the outbreak of war, the number of commissions obtained by cadets and ex-cadets of the contingent up to the end of August, 1915, amounts to 1,521, and 189 commissions were obtained before the war, giving a total of 1,710. In addition, 245 commissions have been obtained, up to the same date, upon the recommendation of the University, by graduates and students who were not cadets or ex-cadets of the University O.T.C. By the end of September, the University had supplied well above 2,000 officers to the Army through the O.T.C. or by direct recommendation, and many other graduates and students have obtained commissions through other channels. Distinctions obtained by ex-cadets of the University O.T.C. include:—Military Cross, 6; Medaille Militaire, 1; Mentioned in Despatches, 14. Under War Office Regulations, membership of the University of London O.T.C. is not restricted to members of the University, and other men of suitable education desirous of qualifying for commissions are accepted. Candidates for enrolment should apply personally to the Adjutant at the Headquarters, 46 Russell Square, W.C.

THE A.M.A. Circular for October contains a paper on "The Organisation of the Cadet Corps System," which was read recently at a branch meeting of the Incorporated Association of Headmasters, in which occur criticisms of the present system which indicate that the cadet corps movement has outgrown the present system of management, and that the movement is not taken seriously. A corps must be self-supporting, and "a properly equipped unit of 100 boys costs £80 in capital expenditure and £50 per annum in current expenditure"; and where scholars wish to become cadets, additional expenditure is entailed in the provision of their uniforms. To obtain these sums the headmaster must organise entertainments, starve the games by directing the money for games to the

corps expenses, and worry "all and sundry in his neighbourhood to give subscriptions. If cadet corps are of national importance, it should not be necessary for the school to make such sacrifices." The situation is complicated by the fact that "in the same type of school there is a contingent of the O.T.C., on the one hand, training boys to be *officers*, and a cadet corps, on the other hand, training boys to be *privates*. Surely this is an anomalous position." The author suggests two main remedial measures: "That the O.T.C. and the Secondary School Cadet Corps should be organised as one body, with standardised training, and that a grant should be made to the combined body sufficient to cover the bulk of the current expenditure and part of the capital outlay."

THE results of the examinations held by the Royal Society of Arts this year have now been issued. 23,269 candidates, who worked 29,526 papers, were examined at centres situated all over the United Kingdom. The subjects taken up included arithmetic, English, book-keeping, economics, shorthand, type-writing, *précis*-writing, commercial and company law, accounting, banking, theory and practice of commerce, commercial correspondence, French, German, Italian, and Spanish. Examinations in the rudiments of music and harmony were held at the same time.

WE are asked to announce that, encouraged by much good work done during the past year, the University Extension Board of the University of London has arranged again many courses of lectures in and around London on history, literature, economics, art, and other subjects, a list of which may be obtained from the University Extension Registrar. Modern European history is more prominent than usual in the list, and the courses on "Shakespeare and England" remind us of the coming Shakespeare tercentenary.

Miss J. F. WOOD delivered the presidential address at the annual conference of the National Federation of Class Teachers in Birmingham. She pointed out that during the last five years there has been a yearly deficiency in the supply of from 3000 to 4000 teachers for the public elementary schools, and that the decline has been more marked in England than in Wales, and greater among boys than girls. She instanced, as some explanation of this serious shortage, the facts that in Birmingham last year only 0.3 per cent., and in the previous year less than 0.6 per cent., of the class teachers were promoted to the position of head-teacher. This state of affairs implies that the teaching profession is closed as regards further advancement when the novice becomes a class teacher at the age of twenty-one. Miss Wood continued by a reference to the fact that men class teachers will be less numerous in the future, and said that it would be deplorable if the teaching profession came to include women only; hence the need for an enlightened statesmanship in dealing with the situation. Such a need implies the consideration of the attitude of teachers to the aim and purpose of education. "Remembering that it is the personality of the teacher and the spirit in which he approaches his task that count, we shall continue to teach our children by example and precept to love

whatsoever things are of good report, and to abhor meanness and deceit and treachery. We shall help them to use their judgment, to be resourceful, ingenious, industrious, and persevering, and encourage them to be unselfish and helpful to one another. We shall teach them to be proud of their country and empire, but they will also learn that heavy responsibilities and duties are the correlatives of great possessions."

ECONOMY is the order of the day, and we note with some apprehension the apparent confusion which exists in the minds of the members of some education authorities between economy and retrenchment. The major portion of educational expenditure lies in connection with the salaries of the teaching staff, and there are signs in many quarters that the teachers are to be mulcted of a portion of their earnings, which, even in the prosperous times of the past, have been admittedly too poor a recompense for the arduous duties imposed upon teachers by their high office. We hear rumours, and we trust that rumour is as usual a lying jade, that the older teachers who receive the highest salaries are to be dismissed from their schools, and that in some schools the staff has agreed to accept a diminished salary in order that no teacher may be dismissed. Education is a national service, and such things should not be permitted, should not even be suggested. Teachers are penalised heavily by the exigencies of national expenditure; their income tax has been suddenly increased by an amount which in many cases will exceed the annual increment to their salaries; their living expenses have risen to the same degree as those of the remainder of the community; and their charitable instincts have been tapped probably in a greater proportion than those of many people who earn similar incomes. They are faced with the problem of making ends meet upon a reduced income which they cannot hope to enlarge; they have to meet obligations previously entered upon in reliance on the continued good faith of the education authorities, and it is little short of a public scandal that they should be penalised solely because they are public servants.

"Of English education it is true that the last fifteen years have been years of sweeping change and of an extraordinary ferment in opinion. Looking backward, we may conjecture that, in obedience to some deep instinct, England has been putting her house in order against the coming storm. Or perhaps the same forces of intellectual and moral unrest, which have issued in a world struggle, showed their presence in an upheaval in our educational thought, and consequently in far-reaching changes in the fabric of our educational administration. Three great things have happened: (a) The machinery of English educational government has been reconstructed. (b) A new conception of the service which education can render to the nation has been formed. And (c) the centre of gravity of English educational purpose has changed." "Once realise that education is a national thing, and you find artificial barriers due to obsolete class distinctions intolerable. Free passage from the bottom to the top there must be for every boy and for

every girl who has the capacity to profit by educational opportunity. But in so far as this easy communication from top to bottom in the educational and economic life of the community depends upon psychological conditions—that is, upon the customary way of looking at life and its opportunities for the energetic individual—all one can say is that in England the change in social outlook among the poor and the rich, among employers and employed, has been rapid during the past fifteen years, and has been profoundly influenced by American feeling and by the habit of mind which is general in the self-governing overseas dominions of the British Empire."

"EDUCATION has become more liberal, less mechanical, more humane. Into the schools of the people the tradition of self-government is passing from the older schools of the wealthier classes. Arnold of Rugby is the educational hero of the English primary-school teacher of to-day. Sir Robert Baden-Powell, founder of the Boy Scouts, is the Arnold of contemporary England." These quotations are extracted from a paper entitled, "Changes in English Education since 1900," by Dr. Michael E. Sadler, which appears in *School and Society* for September 11th. In the same issue occurs also a paper by Mr. Henry Holman, of the Board of Education, "Way of Approach to the Supreme Ideal in School Education." Mr. Holman writes: "To get the greatest efficiency from a school system, it must be national; to be national, its ideal must appeal to the average man; to appeal to the average man, its ideals must be convincing and practicable; and to be convincing and practicable, the ideals must be based upon sound and exact knowledge, and formulated in language which can be understood by the people. Herein is involved the true relation of the educational experts to the schools through the average man; and until this is clearly recognised and practically realised educational progress will be severely handicapped. We must harness the public to the philosopher's car, for education is a national interest, and most concerns the average man. The great duty, one may say, of the scientific educationists is to find the deepest and soundest truths for the educator; while the chief duty of the educational politician and administrator is to convince the general public of the high practical value of these and the necessity of realising them through the schools."

THE *Education Gazette* of the province of Cape of Good Hope for September 2 contains the first part of a memorandum on the teaching of arithmetic. The author acknowledges his indebtedness to publications of the English and Scotch education departments and of the London County Council on this important subject. It may be well to cull a few of the writer's most important dicta, since the experience of those who teach in countries outside our own islands should serve to emphasise or modify our own practical efforts, and since the faults which prevail abroad are still manifest in our own country. "Pupils should be accustomed to work directly on their exercise books or examination paper, and to make no use whatever of scribbling paper. . . . In judging the value of a

wrong answer, allowance should be made for an accidental slip; ridiculous answers, however, are inexcusable, even if the result of an accidental slip. . . . The addition of columns of money—probably the arithmetical operation most used in business life—is an exercise in which pupils of the higher standards should have practice at least once a week, in order to develop both speed and accuracy. . . . Mental arithmetic must not be considered as a branch apart from written arithmetic—for all arithmetic is mental—but rather as a means of performing certain operations without the aid of written symbols, and as a constantly present servant of written arithmetic."

A LETTER addressed by the President of the Board of Education to the chairmen of all education committees in England and Wales appeals to the local education authorities to do what they can to make effective the arrangements which have been announced for obtaining recruits for the Army by voluntary methods. The President is anxious that the public service of education should be carried on with as much efficiency as is possible, and appreciates the inconveniences which may arise from a disturbance of its administrative organisation, but feels that in the present emergency the education service ought to continue to bear its share in this work of primary national importance. The Board has instructed the inspectors to place their services, as far as possible, at the disposal of the committees for the purpose of working the arrangements, and particularly of assisting to organise the clerical and office work connected with the canvass. The President feels sure that many teachers will be willing to place their leisure at the disposal of recruiting committees for these purposes. It is possible, he continues, that the local education authorities may think it desirable to permit some teachers to offer their services (if they wish to do so) to the recruiting committees not only out of school hours, but also during school hours. In such cases the Board will raise no objection, so far as concerns the work of the schools and the payment of grant, to teachers being temporarily released from their duties.

THE September issue of the *English Journal*, published by the Chicago University Press, contains a remarkably fresh and vigorous article on "The Adolescent's Prejudices against the Classics" (meaning English classics), by Miss E. Hodgson, who teaches in a high school in Kansas. The writer draws a vivid picture of a teacher holding open a volume of Shakespeare or Milton with one hand, while with the other he waves some sort of scholastic rod over the rebellious young modern. She confesses that "literature teachers are devoted champions of a lost cause." They are "swimmers battling against an ever-strengthening current of seething modernity." As for the pupils, many of them feel vaguely that certain old musty books called classics are forced upon them by an educational conspiracy. They do not believe for a moment that any normal person would freely choose Shakespeare or Addison when reading for his own enjoyment. Having looked the facts in the face—for are they not facts, here as well as in America?—the writer proceeds to describe an experi-

ment in which absolute sincerity and co-operation between teacher and pupils were the guiding principles. The pupils were to cease pretending that they liked literature. Their business was to know it and judge it, and to let the liking come if it would. We direct attention to Miss Hodgson's interesting paper, because we believe that it throws some light upon an unsolved problem in secondary-school education.

The Child for October contains a well-illustrated article upon the work of the city of Bradford in connection with both mothers and children. The "Municipal Enterprise for Maternity and Child Welfare" has involved the provision of an ante-natal clinic and maternity home; an institution for infant consultations and the supply of milk, at which an average of more than 600 patients are seen weekly; an infants' hospital containing twenty beds; a clinic for children, where children are supervised even after leaving school until they come under the National Insurance Act at the age of sixteen; a children's special hospital, which is a specially arranged department of the Municipal Hospital; and, finally, dinners upon five days a week to poor mothers, of whom 500 are being nourished at present by this agency. The photographs show that Bradford has approached this important branch of public work in no niggardly spirit. The article is written by Dr. J. J. Buchan, the chief medical officer to the Education Committee of the city.

Indian Education for September contains an article by the editor, Mr. J. N. Fraser, in which he deplores the lack of prospective teachers; he points out that in India the profession of schoolmaster suffers because the Revenue Department offers brighter prospects to the educated young man. "The daily work of the schoolmaster appeals to few. There are few who care much for boys. Indian sentiment is well disposed to little children; it is lenient to their shortcomings, enjoys their company, and treats them with great kindness. But when children grow into boys they seem to lose their charm for older men; they are thought to be noisy and prosaic, and simply to be passing through an ugly interval between childhood and respectable manhood. India stands in need of good schoolmasters as much as any country of the West, for here as much as anywhere else the young generation have to look to the State for their culture and their morals. . . . I write these few lines to help the Department to find men. It is not my official duty, as Principal of a Training College, to find them, but only to train them when they are found. Nevertheless, in the course of this training, one of the first tasks that confronts me is to reconcile young men to their profession."

SCOTTISH.

On the occasion of his retirement from the chair of English literature in Edinburgh University, Prof. George Saintsbury was made the recipient of a presentation by his former students. Principal Sir William Turner, who presided, said that the University had been singularly fortunate in its professors

of English literature. Aytoun, Masson, and Saintsbury successively held the chair, all of whom were men who had made a name in literature, though in very different fields. The Rev. Alister J. Stewart, in making the presentation, paid a glowing tribute to Prof. Saintsbury's teaching and personality. The professor, in reply, referred to the extraordinary kindness he had experienced at the hands of his students during his twenty years of service. The great drawback of the Scottish university system was the size of classes, which precluded to some extent that intimate knowledge of individual students which was possible in Oxford and Cambridge. The changes which had been made in recent years whereby more stress was laid upon tutorial work went a long way to obviate that objection, and he thought the universities were now better situated than ever before to do important national service.

In connection with the national thrift movement the Teachers' War Service Committee, representing the three national associations of Scottish teachers, has submitted suggestions for the consideration of school boards and teachers. These have reference partly to the school and partly to the general public. They are arranged under three heads—the systematic instruction in the theory and practice of thrift; the provision of facilities for pupils to bank or invest savings; and the stimulation of public interest in the whole movement in view of their important bearing on our national life and resources. The form in which instruction is given is left to the discretion of individual teachers. The committee has in preparation, however, an outline scheme of lessons which is expected to be ready early in November. The committee recognises that there already exist many agencies for promoting thrift among the young, and has no desire to enter into competition with them. At the same time it feels that a school savings bank offers perhaps the best means of enrolling the young and influencing their parents in the thrift movement, and it urges that wherever possible such banks should be established, at least for the period of the war.

THE annual general meeting of the Educational Institute of Scotland was held this year in the Synod Hall, Edinburgh. The attendance was very large, the special attraction being the election of a new secretary and organiser. Teachers, like other people, seem to take more interest in the rivalries of individuals than in the struggle of principles and policies. The discussion on the duties of the new official occupied a long time, but was maintained at a high level throughout. There was evidence in the proceedings of the existence of an "old gang" and a "new gang," and the contest between them added piquancy to the debate. The honours rested with the veterans, but time is on the side of the challengers, and they will yet arrive if they have only patience and pertinacity. The choice of the delegates after prolonged voting fell on Mr. Hugh Cameron, M.A., Glasgow, who has acted for the past five years as treasurer and registrar of the institute. Mr. Robert Dickson, M.A., headmaster of Dalry School, Edinburgh, was re-elected president, an

honour unique in the annals of the Institute, and a well-merited tribute to long and outstanding service.

THE Scotch Education Department has issued a minute containing new provisions for teaching economical cookery to housewives. Grants in aid are offered to education authorities at the rate of from 2s. 6d. to 5s. for each hour of instruction, and an outline scheme of instruction is provided. This is doubtless part of the great thrift campaign, which unfortunately has not been so great a success as could be wished. But it would be well if advantage were taken of the present occasion to review and revise the whole scheme of cookery for schools. It is a matter of general complaint that school cookery is too high class and ambitious, and has no regard for the conditions in working-class homes. The teaching of food values and of simple and economical methods of cookery should be the main business of all elementary cookery.

THE same minute offers grants also to all school authorities who, with the approval of the military authorities, arrange short courses of instruction for recruits and men serving with the colours. Full liberty is left to the various authorities as to the subjects they will make provision for, but geography, ambulance work, telephony and telegraphy, foreign languages, singing, field cookery, and mending boots and clothes are indicated as being the most suitable.

PROF. LODGE, in his introductory lecture to the history class at Edinburgh University, had some timely words to say on the influence of "shibboleths." Discussing the problem of national service at this time, he said that the question went to the very root of the foundations of the State. Nothing could alter the fact that the State rested, and only could rest, as an organised institution, upon the right of the State to the services and sacrifices of property and life upon the part of all its members. With many people the true bearing of national service had been obscured because it was identified quite erroneously with various shibboleths, such as "militarism," "conscription," and "Germanism." These words acted, and very naturally acted, as violent irritants on many people, who would be prepared to die in the last ditch in opposition to them. He was convinced that in times of war all these shibboleths and preconceived notions should go by the board, and that the basic facts of the situation should be faced resolutely. Those who favoured conscription had done a great disservice to the nation by identifying it with national service. They were more interested in their shibboleths and labels than in the welfare of the State. For the period of the war all such words should be banished from the language.

THE Joint Committee administering the Scottish Teachers' Fund for War Relief at their last meeting allocated a sum of £2,000 to the various national relief funds. Since its inception a sum of £19,000 has been received and distributed, a splendid testimony to the public spirit of the great body of Scottish teachers. Hitherto the funds have been allocated for general purposes, but in future it is intended to build up a fund for the relief of teachers who are incapacitated and for the dependents of teachers who die in

war service. The general purpose will still be kept in view, and contributions made to the national relief funds, as in the past, but the claims of members of their own profession and their dependents will have a first claim upon the consideration of the committee. We believe this change will have the whole-hearted approval of every member of the teaching profession, and that ere long every teacher in Scotland will be a contributor to the fund.

At the opening meeting of the Secondary Education Association (Glasgow Branch) Dr. William Boyd, Glasgow University, delivered an address entitled "A Revolutionary View of Secondary Education." Dr. Boyd began by directing attention to some recent experiments on the training of memory, which seemed to show that the effect of practice with any one kind of material was in the main specific and did not produce any general improvement of memory. The generalisation of that view ran counter to the common notion that capacities developed by the study of particular subjects, like Latin or mathematics, were capable of application in spheres of life other than those in which they had been acquired. In consequence of this and other considerations, there was a growing body of opinion in favour of including subjects in the curriculum purely for their intrinsic value, and not because of some magic power they were supposed to possess of training mind in general. The adoption of this principle in the framing of curricula would revolutionise the curriculum. Languages, whether ancient or modern, would probably count for much less than they do, and the main humanistic training would be got from English literature and from history. Science would be taught with more regard to its practical applications in various vocations.

IRISH.

THE following is an analysis of the awards in prizes and exhibitions made as the result of the Intermediate Examinations held last June:—

Boys.

Senior Grade.

Group	1st Cl. Exh.	2nd Cl. Exh.	£3	£2	£1	Total
Classical ...	3	6	4	2	2	17
Modern Literary ...	4	6	8	6	5	29
Mathematical ...	4	6	4	7	7	28
Science ...	5	7	5	7	8	32
Total ...	16	25	21	22	22	106

Middle Grade.

Classical ...	6	8	4	4	1	23
Modern Literary ...	7	8	11	14	10	50
Mathematical ...	6	8	10	10	11	45
Science ...	6	8	10	11	8	43
Total ...	25	32	35	39	30	161

Junior Grade.

Classical ...	10	16	11	9	10	56
Modern Literary ...	10	15	25	21	21	92
Mathematical ...	10	15	22	18	25	90
Science ...	10	15	18	24	28	95
Total ...	40	61	76	72	84	333

GIRLS.						
Senior Grade.						
Group	1st Cl. Exh.	2nd Cl. Exh.	£3	Prizes £2	£1	Total
Classical ...	—	—	—	—	—	—
Modern Literary ...	5	8	6	3	20	42
Mathematical ...	2	3	—	—	—	5
Science ...	1	5	3	4	2	15
Total ...	8	16	9	7	22	62
Middle Grade.						
Classical ...	—	—	—	—	—	—
Modern Literary ...	7	11	7	6	15	46
Mathematical ...	5	8	2	2	4	21
Science ...	4	5	1	2	4	16
Total ...	16	24	10	10	23	83
Junior Grade.						
Classical ...	—	—	—	—	—	—
Modern Literary ...	10	13	19	11	12	65
Mathematical ...	7	9	7	6	3	32
Science ...	7	10	9	5	3	34
Total ...	24	32	35	22	18	131

The value of the exhibitions is, in the senior grade, £30 and £20; in the middle grade, £20 and £15; and in the junior grade, £15 and £10. It will be seen that there are no classical distinctions for girls in any grade, and that those for boys in classics are far fewer than for the other groups. The total number of exhibitions and prizes awarded this year as compared with last year is as follows:—

BOYS.			GIRLS.		
	Exhibitions	Prizes	Exhibitions	Prizes	Total
1914 ...	200	357	122	138	817
1915 ...	199	401	120	156	876

THE report of the Intermediate Board for 1914 was published in the early autumn. There seems no reason why it should not be out much earlier. It contains the usual analysis of the results of the examinations with the numbers and percentages of passes in each grade and subject, and the amount of the grant to each school. It contains no general remarks on intermediate education in Ireland except a very brief observation on the new Act of 1914 (that dealing with the £40,000 grant and a Registration Council), which it summarises. The observation is this: The Board wishes to point out that the two new Acts dealing with intermediate education, viz., those of 1913 and 1914, have greatly increased the clerical work of the office and added to the duties and responsibilities of the existing staff. This should be borne in mind when the different items in the Board's account are looked at, from which it appears that administration in 1914 cost £6,781; inspection £5,090; examinations £14,060; rewards £6,570; and school grant £51,551. To the school grant must also be added the new grant of £40,000, which is not included in the Board's accounts. The rewards this year total £6,568, but fifteen years ago were £19,302, although there were this year 672 more competitors.

THE Department has published in book form of nine pages some suggestions for the teaching of the first year's syllabus in experimental science for day secondary schools, written by one of its inspectors,

Mr. E. P. Barrett. The *raison d'être* of the suggestions lies in the inspector's conviction that the true aim of the teaching in the first year's course has not been realised by a number of teachers, who seem to be content to inculcate, in addition to habits of neatness and accuracy, a knowledge of the facts and laws embodied in the syllabus. That the pupils should acquire the spirit of inquiry, that they should, in addition to this, learn how to arrive at the accurate laws expressing the relations between obviously connected quantities, has too seldom been a guiding principle of the instruction.

THE National University of Ireland has issued a notice with regard to the entrance of students who desire to be registered on results of outside examinations. The Senate's regulation is that no student may begin his course of study in the University until he has completed his matriculation, and students claiming matriculation on the results of outside examinations (including the senior grade intermediate) are to be registered as belonging to the year in which their applications are received. Such students must therefore apply to be registered before December 31st of the present year if they desire to be eligible to attend courses and enter for first University examinations in 1916.

A MEETING of the Senate of the University of Dublin was held early in the term for the purpose of conferring medical degrees on students who were successful at the special final examinations held for the convenience of those volunteering for active service with the Army Medical Corps. In his address the Vice-Chancellor, Mr. Justice Madden, quoted figures to show how well Trinity College was playing its part in the war. The medical school alone had sent to the Navy, the Army Medical Corps, the military hospitals, and the fighting units a total of 650 men. Of these twenty-four had been killed, twenty-six wounded, ten taken prisoners, twenty-eight mentioned in despatches, five have received the Military Cross, three have been awarded the C.B., two the Order of St. Michael and St. George, and one the Cross of the Legion of Honour. Of the college students altogether 970 had joined the Colours since the beginning of the war, and of these seventy-four had been killed. In addition, the Dublin University Women's Voluntary Aid Detachment had organised a new hospital which the War Office had accepted, and in which sixty-one wounded soldiers had been treated. The total number of Trinity men, past and present, serving with the Colours was 1,500, and of these 770 have obtained commissions through the Officers Training Corps, including three of the junior fellows—Mr. Stewart, Mr. Luce, and Mr. Godfrey.

WELSH.

SIR HENRY JONES, the Welsh shoemaker who rose to be professor of moral philosophy in the University of Glasgow, is to make a tour through Wales addressing recruiting meetings and lecturing on war thrift. Sir Henry Jones is a weighty and eloquent speaker, and his words will appeal to Welsh audiences with special power—the more so as he has two sons on active service.

THE teaching of agricultural subjects bids fair to take an important place in Welsh education. The recently issued report of the Board of Agriculture on the distribution of the grants made during the year 1914-15 for the purpose of furthering agricultural education and research, gives interesting particulars of what is being done. The counties of Wales, with the exception of Glamorgan and Monmouthshire, are formed into groups which centre respectively in the Bangor and Aberystwyth University College; these undertake the responsibility for the whole of the work in their respective areas; a grant from the Development Fund is to be made for the purpose of extensions on the college farm at Bangor, while Aberystwyth is engaged on special investigations into the effect of the lead mines of Cardiganshire on the fertility of the land, and into the best means of remedying the damage done to the land by the drainage from them. In Glamorgan and Monmouth agricultural instruction is managed by special committees; there is a Farm School at Usk, where extension work has been interfered with during the year by the war.

IN the secondary schools, too, the subject has obtained a footing: the Central Board is likely to give it increased encouragement, and in some schools it is already taught. There is, of course, no getting away from the fact that whatever bias be given to the teaching, the underlying principles will have to be taught, but there is no reason why illustrative examples should not be chosen with special reference to the future occupation of the pupil. As usual, the difficulty is to find where to draw the line, to find how far the training can be made vocational without losing its liberal character.

AN interesting and valuable account of work of this kind undertaken at Welshpool County School was given by Mr. R. E. Owen at the May meeting of the Welsh County Schools Association. He showed how the teaching had developed from occasional lectures on agricultural subjects into a definite scheme of instruction, in which nearly all the subjects of the school curriculum were correlated with the study of the life and work of the district. The chief differences in the time-table from that of an ordinary small secondary school are: the introduction of botany from the first year of the course, the free use of garden plots for experimental work, the use in chemistry and physics of agricultural examples where they are available, the study of economic geology as locally applicable, and of entomology, with an increasing amount of definite agricultural teaching in the higher forms. Arithmetic, geography, woodwork, and drawing are also brought into relation with this work, with which they have naturally many points of contact; also nature-study, local history, and literature. It is found that one language is almost necessarily driven out of the curriculum—which will be a relief to a certain number of pupils.

THE Cardiff Gas, Light and Coke Company, the secretary and manager of which is a member of the Technical Education Committee, has given premises rent free, together with suitable plant, to enable the

engineering students in the technical classes to form a body of munition-makers. The City Council gave £250 towards the expenses, which amount has been supplemented by grants from the Board of Education.

THE National Union of Teachers has taken up the case of a school teacher at Senghenydd, who was assaulted by an angry mother who accused her of ill-treating her child; a fine of twenty shillings was inflicted, with the alternative of eleven days' imprisonment.

THE SEARCH FOR NOBILITY.

The Research Magnificent. By H. G. Wells. 406 pp. (Macmillan.) 6s.

MR. WELLS, to whom this generation owes so much, is still disappointed with mankind. Though the great war is but casually mentioned—to be implicitly condemned as madness—there is plenty of material abroad out of which a vague internationalism may be enforced. One of the characters is described as "entangled and prophetic"; this describes the novel.

"The Research Magnificent," which means the search for nobility, is a probably unconscious development of that character said to be drawn from life which is called in the Ethics the high-souled man. Mr. Wells suffers all through his book by calling it aristocracy—a glaring misnomer. To modern fiction the idea of a man consciously seeking for nobility is new, and the prelude is fascinating. Folklorists would put the plot thus: boy with ideas, unsympathetic home, riches, plans for life, entanglement with wrong woman, meets right mate, still dominated by ideas, travels, mate unfaithful, leaves mate, develops ideas, dies failure. We are a little tired of these plots, these wonderful mates, always unfaithful; but we are not tired of ideas, or of Amanda—and Mr. Wells does not give us quite enough of either. Poff Benham, a mixture of Aristotle's high-souled man, Tolstoy, and internationalism, is interesting throughout, from the day when he conquered fear to the last magnanimous and shameful scene.

The book contains the usual amount of travel (Russia, Balkans, everywhere), of brilliant description (the jungle, the Thames), of sex troubles and the like; and it produces an exquisite heroine, Amanda, ruthlessly depedestalled. The gospel of social regeneration, pursued by the scientific conquest of Fear, and a scientific inquiry into the causes of men's internecine hate, postulates that if the individual moralist-noble, himself the visible incarnation of the invisible man-god (something akin to Swinburne's collective man-god), could appear in ten thousand forms, then the world would be regenerate, for Mr. Wells will be content with nothing but the noblest ideals. The answer is, as Matthew Arnold well saw, that there is nothing in man's history to show that he has title to welfare, repose, or happiness, unless we enlarge the meaning of the term to its religious or even its Greek content; yet it is precisely this religious meaning which the author, by his leave, is pursuing. Mr. Wells is a "religious" writer.

For the characterisation, Prothero (who may exist, but not typically) is surely a disgusting ninepin, put up to be shamed; the hero's mother, whose life-story is the hinge on which the tragedy slowly revolves, allows Mr. Wells the opportunity of his one piece of magnificent restraint, for her arraignment is dispensed with; the rest, always with the exception of the inconclusive Amanda, are shadows.

In aim this will probably be found to be one of

Mr. Wells's best novels; the thankful reviewer wishes that, after the prelude (48 pp.), Mr. Wells had given less of the Balkans and of sex and much more of Poff; Poff is real, and we cannot get him out of Baedeker. The *SCHOOL WORLD*, so rarely mentioned in novels, is referred to twice by name as a leading educational journal in which minutiae entirely remote from life are feverously discussed. Perhaps this short but appreciative notice of a stimulating book will partially redeem our character.

HISTORY TEACHING IN EUROPE FROM THE SEVENTEENTH CENTURY ONWARD.

By F. J. C. HEARNshaw, M.A., LL.D.

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AMERICA has devoted much attention to what it likes to call the science of pedagogy, and within the scope of this science few subjects have been dealt with more frequently or more fully by American educational experts than history. When, in 1883, Messrs. D. C. Heath and Co., of Boston, commenced the publication of their "Pedagogical Library," the first volume issued was Stanley Hall's "Methods of Teaching History." The preface explains the reason of the choice: "The editor, without having a hobby about its relative importance or being in any sense an expert in history, is convinced that no subject so widely taught is, on the whole, taught so poorly." This pioneer volume was followed, in 1893, by B. A. Hinsdale's "How to Study and Teach History," one of the "International Education Series" published by Messrs. D. Appleton and Co., of New York. In 1896 Mrs. Sheldon Barnes issued her original and suggestive, if somewhat eccentric, "Studies in Historical Method." In 1899 the well-known committee of seven gave to the world the results of two years' careful investigations, in their valuable report on "The Study of History in Schools," and from that date onward further reports and treatises have been so numerous that it is impossible here to mention them.

The latest of the series is a volume entitled "Teaching of History in Elementary and Secondary Schools," by Prof. Henry Johnson, of Teachers' College in Columbia University.¹ It contains many of the usual and familiar features, e.g., discussions concerning the meaning and scope of history, the aims and values of history, and the methods by which it can best be taught. But two features distinguish this book from its predecessors. First, its author insists in a novel and refreshing manner on "the rigour of the game"—that is to say, he protests against the growing practice of making history, like every other school subject, soft and easy and fascinating at the expense of its disciplinary value. He contends that a much higher standard can be attained than is commonly aimed at, for he holds that "history of almost any kind can be taught at almost any stage of instruction on the simple condition that it is taught in a sensible way." Secondly, he has made "a broader survey of past and present conditions than has hitherto been included in a book on the teaching of history." He rightly remarks that "teachers of history are committed by their own logic to a study of the experiences of other teachers," and expresses wonder that the history of history-teaching has been so little investigated. It does, indeed, at first sight seem curious that specialists who claim that

the primary value of their subject as a factor in civic education is that it serves as a guide to practice, should themselves have neglected to study the practice of their predecessors in the field of teaching. But the explanation is not far to seek. Prof. Johnson himself supplies it. The history of history-teaching, he tells us, is a melancholy record of failure: "Something was apparently wrong in the seventeenth century, when history first began to be taught seriously as an independent school subject, and something has apparently been wrong ever since." Nevertheless, though the story is sad, it is both interesting and instructive, and we owe Prof. Johnson cordial thanks for laying its outline before us.

In classical times history was valued merely in virtue of its literary qualities. Livy and Tacitus provided models of prose style; it was immaterial whether what they said was true or false. Similarly in medieval education history had no place of its own; it figured, as history, neither in the Trivium nor in the Quadrivium. In so far as it was read at all, it was read as a branch of rhetoric, the language and not the content being the matter of study. When the medieval scholar had completed his general education, if he proceeded to read in theology, he met history again as part of his divinity course. He pored over Orosius or the ecclesiastical historians in order that by means of the edifying legends which they propagated he might confirm his own faith and that of the flock to whom he might be called upon to minister. In early modern times the grammar school was so much occupied in the laborious task of making its pupils masters of that alien instrument of knowledge, the Latin language, that it could devote no serious effort to any other task. Such history as crept into the curriculum was only the Greek and Roman history incidental to the classics.

The first serious attempt to introduce modern and national history into the school course seems to have been made by the humanist educator Jacob Wimpheling, who in 1505 published a text-book of German history. His purpose was patriotic, and a similar purpose led Luther, in the midst of his struggle with the ultramontane Papacy, to advocate instruction in the annals of the past. Little, however, was actually done in the sixteenth century. It was not until Comenius published his "Great Didactic" in 1632 that history was definitely recognised as an integral part of a liberal education. The course advocated by Comenius was an astonishingly wide one; it included history general, biblical, and national; history political, social, and cultural. The principles advanced by Comenius were in some degree embodied in a historical work published in 1676 by Christian Weise, under the title, "Der kluge Hofmeister." Meanwhile, in England John Milton was engaged in bringing history into the school curriculum. Not only did he teach history to his much-suffering nephews; he also defended its introduction in his treatise, "Of Education." By means of history, he said, the young were to be "stirred up with high hopes of living to be brave men and worthy patriots, dear to God and famous to all ages," and in the end were to be made fit "to perform justly, skilfully, and magnanimously all the offices both private and public of peace and war."

The eighteenth century saw considerable extension of history teaching, though it was on the Continent rather than in England that the movement was evident. Strangely enough, it was the supposed ethical value of history that appealed to the men of the Age of Reason. Hence it was general history, more than national history, that was cultivated. Rollin declared that "history when well taught is a school of morals for all men," and described the particular ways in which it imparts instruction in

¹ New York: The Macmillan Company. 6s. net.

right principles. To exemplify his theory he wrote his famous "Ancient History." Rousseau made history prominent in the education of Emile, in order that Emile's character might be duly developed on good lines. It is notable, however, that he considered that his pupil would not be sufficiently mature to begin his study of history as a school of morals until he had attained his eighteenth year. That eminent moralist of the same period, Frederick the Great of Prussia, enforced the teaching of history in his dominions, on the ground that it was "no longer possible for a young man who is to live in the great world not to know the events which belong to the chain of European history."

The Age of Reason was brought to a catastrophic close by the French Revolution and the Napoleonic Wars. Cosmopolitanism finally went down before nationality, and the study of world-history for moral ends gave place to the study of national history for patriotic ends. "Patriotism," says Prof. Johnson, "became, in fact, the dominant purpose of school instruction in history, and is in most countries still the dominant purpose." He then proceeds to show in detail the various methods of teaching, and the diverse curricula, which have been adopted in the principal countries of Europe and in the United States of America during the century. The summary—itsself an extreme condensation—occupies nearly sixty pages of the book before us. Hence no attempt can here be made even to sketch its main lines; the reader must be referred to Prof. Johnson's luminous pages. Only one note can be allowed. The present German Emperor, it appears, favours the retrogressive method of history-teaching: "Hitherto," he said in 1890, "the road has led from Thermopylæ by way of Cannæ to Rossbach and Bienville. I would lead our youths from Sedan and Gravelotte by way of Leuthen and Rossbach back to Mantinea and Thermopylæ." Let us hope that soon the rising generation of Germans will have something more salutary than Sedan to begin with.

THE "TIMES" BROADSHEETS.

It was a happy idea to make an anthology of good and interesting pieces for the men in the trenches and the sailors with the Fleet. The containing envelopes tell us that there was an "urgent demand for the best literature in a portable form." We should have thought that a few more particulars about this "urgent demand" might have been enclosed in every envelope. That the supply is excellent need scarcely be said. Every envelope is but a penny; every envelope contains six and more short masterpieces; all is under the editorship of Sir Walter Raleigh. If we criticise at all it is because we hope that the series, the numbers and description of which are at present in the most hopeless confusion, will be continued by the *Times*.

The men who are fighting and watching, straining and dying, need and ask for something to read in spare minutes and weary long hours; that is granted, and hundreds of private letters prove it. The question that has to be answered is: "What do they want?" Now, it seems to us that no single mind can tell, and be the editor who he may, it would surely be well to give him aid in the shape of a wounded officer or two, a wounded Tommy of the reading type, and even a theatrical manager.

On analysing the contents of the envelopes sent us we find there are fourteen sheets, with passages excellently chosen from the Bible, two of these being from the O.T. Apocrypha; five sheets of religious prose, two of them from Bunyan; twenty-three sheets of serious verse; ten sheets of less serious verse, two of which

alone can be labelled comic; ten sheets which we may call serious biography (including "Die Vernon," surely a misprint); fifteen sheets which we may call stories of adventure; twenty-six sheets of lighter prose, a great deal of it being comic; ten sheets dealing with the soldier and war; six sheets dealing with the Navy or the sea; three sheets dealing with English scenery; and fifteen of a miscellaneous character which it is impossible to catalogue under any of the foregoing heads. It seems that light prose has its share to the exclusion of light verse; and that serious verse has more than its share to the exclusion of matters nearer to the soldier and the sailor; while apparently England herself and all that home means is rather scantily dealt with. Lighter verse and comic verse, so dear to all in stress and strain, are very severely censored, and the list of stories pure and simple might greatly be enlarged without going outside the "best literature."

We welcome King Solomon's prayer and the "writings under the pillow"; the songs of Lovelace and John Gilpin; Boccaccio's Falcon and Falstaff's recruiting; the Armada and the short extract from Pericles's immortal speech; but why have we such a little from Dickens, so much from Wordsworth, Blake without the great hymn, "Prepare, Prepare," scarcely any English song to speak of, and hardly anything in the way of individual prowess? It seems, too, that a great opportunity has been up to this time lost of translating or using translations of some of the short masterpieces of Belgian, French, Russian, Italian, and Japanese literature; and we could spare Bacon's Essays (always hard to understand) if Sacchetti and Maupassant, and Daudet and Poushkin and Verheeren were here. For our foreign friends have again and again written exactly what the soldier and sailor love and understand.

On the whole the selections appear to us to savour rather of adultism; and whatever our men are in thews and courage, in spirit they are boys. But the venture is fine, and we hope it will be continued and perhaps lightened. Ballast is a good title for such broadsheets; cargo sounds too heavy. The best literature is good; the best literature for soldier and sailor is better.

RECENT SCHOOL BOOKS AND APPARATUS.

Classics.

Attila and the Huns. By Edward Hutton. xiv + 228 pp. (Constable.) 6s. net.—This book makes a timely appearance; we have read it with interest and pleasure, and recommend others to do the same. The topical interest of the book—which is great—is briefly put by Mr. Hutton in his preface:—"It would seem, then, that as well physically as spiritually the Prussians in so far as they are Finnic are of the same Turanian stock to which the Huns belonged." Mr. Hutton's narrative of the career of Attila makes fascinating reading in itself, and this is enhanced by the frequent apparition of Kaiser William, sometimes with, and sometimes without, Mr. Hutton's contrivance, in the mind of the careful reader. Some of the parallels are most striking, as that of the position of Theodoric and the Visigoths, when Attila turned upon the West, and the position of Belgium in 1914; and the book is worth buying for this reason alone. But it is of more than ephemeral interest. It is the best account of Attila's career since Gibbon that we know. Gibbon told us (in a footnote) that Priscus was undeservedly neglected, and Mr. Hutton has done well to publish his sources in the original Latin in the second part

of his book. These comprise some seventy pages of lengthy excerpts from Ammianus Marcellinus, Priscus's "De Legationibus," and Jornandes's "De Rebus Geticis." It is one thing to refer casually to the Germans as Huns, but it becomes quite a different reality to us when we read that "*Hunorum gens . . . omnem modum feritatis excedit*" (p. 153), or that they were "*Per indutias infidi . . . inconsultorum animalium ritu, quod honestum inhonestumve sit, penitus ignorantes*" (p. 155). There are four maps, and the book is well printed; but the proofs of the latter portion, containing the sources, should have been read with much greater care.

P. Ovidi Nasonis Tristia Epistulae ex Ponto Halieutica Fragmenta: recognovit brevique adnotatione critica instruxit. S. G. Owen. Scriptorum Classicorum Bibliotheca Oxoniensis. (Clarendon Press.) Paper, 2s. 6d.; cloth, 3s.; India paper, 4s. 6d. Not paged.—This is a welcome addition to the Oxford texts. Although these are not Ovid's most finished works, there is nothing in them that is unsuitable for school reading, and they are agreeable to read if not read too slowly. A good deal of amusement may be got out of them if you have the vein, although no doubt Ovid did not intend it, and some of the pieces are very clever. What a pity we cannot include his barbarian verses with which he astonished the good people of Tomi! Mr. Owen is known already as an authority on the text, and he has added here a collation of some fragments of the *Tristia* lately found. The critical notes give everything that could be wanted, and we hope it will not be long before our English edition, complete, shall supersede the unsatisfactory German ones. There is a useful index.

The Eclogues and Georgics of Virgil. Translated from the Latin by J. W. Mackail. New edition, revised. (Longmans.) Cloth, 2s. net; leather, 3s. net.—A new addition to Longmans' well-known pocket library. Mr. Mackail's charm as a translator of Virgil is too well known to need mention, as, indeed, is this particular translation. In this re-issue some slight modifications have been made in order to make the translation correspond to the Oxford text, but it is substantially the same as before, though cheaper.

Demosthenes' Olynthiacs. Edited by J. M. Macgregor. lii+101 pp. (Cambridge University Press.) 2s. 6d. net.—An excellent school edition. The introduction deals fully with the life of Demosthenes and with the history of his times; the notes are scholarly, terse, and wonderfully precise. The two appendices show the same qualities in a marked degree. We wish, however, that such introductions as that which begins this book were unnecessary, and that there were one large "Companion" from which the student throughout his classical course could derive information necessary for the study of any Latin or Greek text.

English.

The Extra Day. By Algernon Blackwood. 358 pp. (Macmillan.) 6s.—"Who drives fat oxen should himself be fat"; and, quite respectfully we say it, who reviews Mr. Blackwood should himself be a trifle mad. For the author of the "Human Chord" and "John Silence" belongs to the small company who get behind the veil, and of them is the Kingdom of Dreams. Lord Dunsany, Lafcadio Hearn, James Stephens, Helen McKay, Richard Middleton, and, in older days, Fechner and Apuleius, were all initiate. Until p. 188 the extra day does not slide in, but from that page it riots. If only for the story, "What Nobody Under-

stands," published elsewhere also, the book would be worth buying; but The Tramp and Come-back Stumper and Judy and Maria and the Uncle of all Uncles dwell with us. We hope no one will, however, see straws in the author's hair; as poor Middleton said so wisely, "The day you see straws in my hair there'll be no more stories." And that would be a calamity for Mr. Blackwood's many readers.

Robert Louis Stevenson. By Amy Cruse. 183 pp. (Harrap.) 1s.—This is a brief biography of one whose literary fame may die but whose spirit must remain to encourage and to satisfy those who believe in humanity. "We were in prison and he cared for us. We were sick and he made us well. We were hungry and he fed us. The day was no longer than his kindness." Of whom among the "literary people" could this be said? Thus it is that whether the stories survive the Essays or the writer of both cease to be an influence in literature, the man will live for his humanity, his brotherliness, his grit, his versatile powers. It is well that his biography should be issued in shilling form. He belongs to the brotherhood of Parkman and Thomas Hood and Prescott and Pascal, men all skilled in facing and outwitting pain and disease and despair. Great thanks are due to those who have allowed the use of copyright material; and the ten illustrations, including an excellent portrait of Father Damien, add much to the little volume; but why did not Miss Cruse give us that most instructive of all pictures—R. L. S. playing the flageolet in bed? We hope the higher classes in schools will soon see this well-written and sympathetic volume, and, reading it, will turn to "Ordered South," "A Penny Plain," "The Child's Garden," and even to "A Christmas Sermon."

Perse Play-Books. No. 5. With an Essay by H. C. Cook. 211 pp. (Heffer.) 4s.—The preceding four volumes of this illuminating and bright series have been reviewed with the greatest sympathy in these pages. We have more than once been delighted with the enthusiasm of the editor and perturbed by his Miltonic Billingsgate when speaking even of living writers, and we have noted that the Perse School, though more in the public eye than others, is by no means the only school where Littlemen write verse, act, spout, and pose. If children's verse, written in the past ten years, could be collected we should have some very stout volumes and a few very good poems; the present volume is stout, and has a gem here and there. The main interest is centred round Mr. Cook's preface, which really does not add much to what he has told us before; but its expression is most fresh, and it is a delightful plea of a somewhat eccentric teacher for free work in literature. That is all, and there are many Mr. and Miss Cooks in England, "but convention weighs them down." The editor cannot yet give up abusing people; but in this volume he merely attacks the dead; and even as Mr. Alfred Noyes "slated" the Ancient Mariner, so Mr. Cook is never tired of telling us that he regards the work of "Scott, Campbell, Macaulay, Longfellow, and that Mrs. Hemans" as shoddy and sorry fustian, not reflecting that when his stick wags in this wholesale denunciation neither we nor the young much regard Mr. Cook; his criticism is merely indecent. He asks in a footnote whether "whist" in Ariel's song means anything; if he will turn to Peele's "Honour of the Garter," 1593, he will find "When all were whist," i.e., silent; perhaps he would not allow Spenser and Milton as authorities for the word. Attention may be directed to the brilliant envoy, written, we hope, without a master's aid, on the last page.

A Book of Verse. Edited by J. C. Smith. 512 pp. (Clarendon Press.) 3s. 6d.—This is the already well-known parts i., ii., and iii. of Mr. Smith's anthology bound together, with a few notes of which the editor is a trifle shy. The selection is really a fitting addendum to Palgrave (the true Palgrave), who rumour says was Tennyson. We should have liked a long preface to each part; but part iii. has a worthy one. We are glad to see that the editor recants, though in a corrigendum only, over the famous misquotation in the Elegy, to which we always direct attention. It will be a long time before a more satisfactory book for schools is printed, yet a publisher might take a hint from the *Times* Broad-sheets, and produce from time to time little bindable selections of verse which teachers could add to and scrap at will. The idea is new at any rate, and good verse, swept too soon down the river of Time, is always coming into the printer's market.

History.

A History of England and the British Empire. Vol. iv., 1802-1914. By A. D. Innes. xxxvi+604 pp. (Rivington.) 6s. net.—With commendable industry Mr. Innes has brought to an end his four-volumed "History of England and the British Empire," the third volume of which appeared only last year. This concluding section begins with the outbreak of the Napoleonic war, and carries the story of Britain down to the outbreak of the still vaster conflict at present raging. It is not, however, primarily a record of military conflict, but of political change, industrial development, colonial expansion, scientific advance, and literary activity. So many and various, indeed, are the topics which Mr. Innes finds it necessary to discuss that he (like all other historians of the nineteenth century) is unable to give any sort of unity or coherence to his narrative. He has to chronicle events, after the manner of a journalist, roughly in the order in which they have occurred. On these lines he provides a sound and unprejudiced summary of recent happenings. A valuable chapter (No. X.), which stands apart from the rest, attempts a general estimate of the Victorian era. The literary style of this volume is not of a high order. There are many evidences of hasty composition and inadequate care in proof-reading. The following sentence taken at random (p. 521) is typical: "No Victorian writer ever attempted to model himself consciously or unconsciously after Carlyle; the peculiarities of his style made him equally easy to parody and equally impossible to imitate." In this sentence the words "consciously or unconsciously" are superfluous; "after" should be "upon"; the second "equally" is redundant.

A Social and Industrial History of England. By F. W. Tickner. xii+721 pp. (Edward Arnold.) 3s. 6d.—This exceedingly attractive and remarkably cheap book is intended by its author to present "such an outline of the nation's development along social and industrial lines as should, in his opinion, be read by all young students as part of their work in history." It does not, of course, in any way supplant or take the place of the ordinary and quite indispensable textbook of political history framed on chronological lines. It merely supplements it by filling in important elements which are inevitably lacking in a narrative history, however full it may be of detail. Its forty-seven chapters give descriptive accounts of such matters as "Life in an Early English Village," or "A Medieval Town at Work and at Play," or "The London of Good Queen Bess." It contains chapters on literature, on

religion, on modes of government, and on all sorts of other things. For the scope of "Social and Industrial" history appears to be wholly undefined. The only principle of selection (and it is not a bad one) appears to be to include whatever is interesting. If it is not industrial, then it must be social. There are forty-one well-chosen illustrations in the book.

The Children's Story of the War. By Sir Edward Parrott. Vol. II. From the Battle of Mons to the Fall of Antwerp. 320 pp. (Nelson.)—The first volume of Sir Edward Parrott's history of the war for children dealt with the antecedents of the struggle, and traced the course of events to the landing of the British Army in France. The present volume relates the critical events of the two months August-October, 1914. The three main themes are, first, the battle of Mons, the retreat of the French and English to Paris, and their recovery, culminating in their occupation of their existing line; secondly, the eastern campaign, with its victories in Galicia and its disasters in East Prussia; thirdly, the beginning of the war at sea with the battle of the Heligoland Bight. The story is told in a vivid and interesting style. Many anecdotes are included of the kind that appeal specially to the healthy mind of childhood. The illustrative plans, sketch maps, and pictures are numerous and valuable. The book is thoroughly attractive and informative, even to persons who can no longer claim to be children.

Study of Social and Constitutional Tendencies in the Early Years of Edward III. By Dorothy Hughes. viii+246 pp. (University of London Press.) 2s. 6d. net.—This study by Miss Hughes embodies the results of a laborious piece of original research which gained the M.A. degree of London University. It is of special interest to students of constitutional history, for it deals with the events connected with the important Stratford crisis in 1340, which it elucidates with the aid of a mass of new documentary detail. The growing demand of Parliament to control national taxation, and the faint beginnings of the doctrine of ministerial responsibility, are well illustrated.

Geography.

The Surface of the Earth: Elementary Physical and Economic Geography. By H. Pickles. xii+180 pp., maps, diagrams, and illustrations. (Cambridge University Press.) 2s.—We have here a simple and readable account of the basic natural phenomena which form the subject-matter of elementary geography. The majority of the pictures are well chosen and well reproduced, and therefore effective; the text consists almost entirely of the matter which a good teacher would teach. These facts determine the position of this book as an excellent supplementary reader from which the teacher could set homework either as preparation or as revision.

The River Severn from Source to Mouth. By M. Lanchester. 58 pen and ink sketches. 72 pp. (Murby.) 2s. 6d. net.—This book presents a story which has a completeness and individuality of its own. Specially illustrated by sketches, many of which are suitable for reproduction on the blackboard, the book guides the reader along the whole course of the river, and, in a chatty fashion, reminiscent of a river's flow, carries the young reader through a complete descriptive account of what a river means. Teachers will find ideas and their pupils will obtain enjoyment from this unpretentious volume. The sketches are not uniformly excellent; those which are notable for an economy of line are perhaps the most successful.

Rambles Among our Industries. Lime and Cement. By J. G. Adams and C. A. Elliott. 80 pp., illustrations. (Blackie.) 9d.—Portland cement is one of those utilities which most people are apt to take for granted; reinforced concrete is something one vaguely considers to be extremely useful; few people realise either the importance or the process of manufacture of Portland cement. This book should prevent ignorance of that kind among pupils in school; for they should have access to the book itself or their teachers should impart to them the information which the book contains.

Mathematics.

Practical Mathematics for Advanced Technical Students. By H. L. Mann. xi+483 pp. (Longmans.) 7s. 6d. net.—A great many of the troubles which beset us at the present time are due to the want of a general diffusion amongst the community of a knowledge of even elementary mathematics and of ability to apply it to practical problems. We therefore feel inclined to welcome any book, whatever may be its shortcomings, the object of which is to remedy to some degree this lamentable state of things. The present volume provides a course of instruction in algebra, trigonometry, and the calculus, with applications to problems in mechanics and electricity. As is usual in books of this type, a considerable part of the work is numerical, but there is not too much to make it tiresome.

Some of the bookwork is not presented in the best possible manner. We do not know of any justification in the laws of algebra for the statement on p. 51, that the real result of operating with $a+bi$ on $\sin pt$ is $a \sin pt + b \cos pt$. We think there has been a misunderstanding of some results connected with differential operators. Again, the method used on p. 67 for obtaining the cosine of the angle between two lines in space seems very clumsy, and in the introduction to the calculus more might be said about the meaning of a limit, and of the manner of approach to a limit. There is a useful chapter on finite differences. That upon vectors might well come earlier and certainly requires reconsideration. To attempt to treat space vectors and prove their laws of combination simply by the use of ordinary real and imaginary quantities is impossible; the quaternion is bound to come in, even though it may be disguised. However, the book contains much excellent matter, and should be helpful to technical students.

Science and Technology.

Advanced Inorganic Chemistry. By P. W. Osecroft. 504 pp. (Bell.) 5s. net.—The author states that his book is intended for the use of boys in the upper forms of schools, who have already taken a year's course in practical and theoretical chemistry. The course of work outlined by Mr. Osecroft includes all that would be undertaken by the average boy in his preparation for matriculation and entrance scholarships. The first few chapters are recapitulatory in type; then follows a brief study of acidimetry and alkalimetry, after which sections dealing with the laws of combination, atomic and molecular weights, thermochemistry, electrolysis, and liquefaction of gases preface the systematic study of the chief chemical families. There are numerous points which the author should consider in the event of a second edition being called for. Thus palladium does not form a definite compound with hydrogen (p. 6); the adjective potassic (pp. 9 *et seq.*) is no longer in common use, indeed, the author drops it himself on p. 390 when

dealing with the compounds of potassium. Priestley is twice misspelled on p. 24; Brin's peroxide process is obsolete (p. 27); and the term "hydrate" should be replaced by "hydroxide" (p. 30). The preparation of aniline (p. 62) is scarcely "one of the most important manufacturing processes," whilst the statement that the periodic classification "is regarded, more or less, as a scientific curiosity and really serves very little useful purpose," is balderdash. That "the conductivity of a solution increases with dilution" is erroneous, and Faraday did not use a bunsen burner as shown on p. 175. The liquefaction of sulphur dioxide is not a suitable experiment for boys, who could scarcely be expected to construct the apparatus shown on p. 175 sufficiently strong to eliminate all risk of the tube bursting. A far better way of preparing hydrogen bromide than that shown on p. 204 is Ramsay's method, wherein hydrogen and bromine vapour are led through a heated silica tube. In the contact process the sulphur trioxide is not absorbed in dilute sulphuric acid (p. 233), and persulphuric acid is not made by dissolving sulphur trioxide in sulphuric acid. Nitroglycerin (p. 258) does not explode "when tickled with a feather"; perhaps the author is thinking of nitrogen iodide? Moreover, cordite is not "nitroglycerine mixed with glue and vaseline." The author's idea that "considerable doubt exists about the existence of nitrogen trioxide" shows a want of knowledge of current research. The sum total of the above criticisms amounts to this, that he who would write a text-book on chemistry, even for the upper forms of schools, should be somewhat closely in touch with his subject.

The Story of Plant Life in the British Isles. By A. R. Horwood. Vol. ii. xiv+358 pp. Vol. iii. xvi+514 pp. (Churchill.) 6s. 6d. net each.—Vol. i. of this work has been noticed already in the SCHOOL WORLD. The series, which is completed by the issue of vols. ii. and iii., provides descriptions of some 250 typical species of the British natural orders, together with 272 illustrations, mostly from photographs. The main principles of botany are dealt with in the introductions to the volumes, while instructions for practical work, bibliographies, and outlines of modern systems of classification are given in appendices. The more technical portions of the work show but little originality, either in matter or in manner of treatment. The introductions are too casual in arrangement and inexact in expression to be of much use to advanced students, to whom alone many of the sections will be intelligible. The volumes will be useful for reference, especially for the sake of the illustrations, many of which are almost perfect of their kind, and of the folklore introduced in the descriptions of species.

EDUCATIONAL BOOKS PUBLISHED DURING SEPTEMBER, 1915.

(Compiled from information provided by the Publishers.)

Modern Languages.

Madame de Bawr, "Michel Perrin." Edited by Theodore Getz. With Notes, Questionnaire, Grammar Drill, Composition Exercises, Thèmes Libres, and Vocabulary. (Longer French Texts.) 76 pp. (Blackie.) 8d.

"Louvain, 891-1914." By L. Noël. 244 pp. (Clarendon Press.) 3s. 6d. net.

"Matriculation French Papers. Papers Set at the Matriculation Examination of the University of Lon-

don from June, 1905-June, 1915, with Model Solutions to the last Paper." 124 pp. (Clive.) 1s. 6d.

"Intermediate French Papers, being Recent Papers in French Set at the London University Intermediate Arts Pass Examination, from 1899-1915." 60 pp. (Clive.) 1s.

"German Prose Composition for Beginners, with Rules, Hints, Footnotes, Vocabulary, etc." By Anton J. Ulrich. 128 pp. (Hachette.) 1s. 6d. Key to same, 2s. 6d. net.

"German Prose Composition—Intermediate and Advanced (Materials for Translation, Examination Papers, Notes, Hints, Vocabulary, etc.)." By Anton J. Ulrich. 128 pp. (Hachette.) 2s. 6d. Key to same. 3s. 6d. net.

"Ten Fairy Tales from Andersen for Junior Forms." With Vocabulary, Notes, etc. By A. Weiss. 220 pp. (Hachette.) 2s.

"New Modern German Course: Oral Instruction, Graduated Translation, Dictation, Questions, Free Composition, Irregular Verbs, Tables of Tenses, Popular Poems, etc." By A. G. Haltenhoff. 130 pp. (Hachette.) 2s. 6d.

"Vade-Mecum of French and English Military Terms, for Members of the O.T.C., Cadets, etc." By Eugène Pluman. 134 pp. (Hachette.) 2s.

"German Lessons on the Gouin Method." First Book for Children. By F. Thémoïn and R. O. Gercke. 128 pp. (Hachette.) 1s. 6d.

"Reineke Fuchs." Rewritten in easy German, with Vocabulary, Questions, Retranslation, Illustrations, etc. By A. J. Ulrich. 104 pp. (Hachette.) 1s. 6d.

"Les Exploits de Maître Renard" (from "Le Roman de Renard"). Simplified text, with Vocabulary, Questions, Illustrations, etc. By Anton J. Ulrich. 104 pp. (Hachette.) 1s.

François Coppée: "Fais ce que dois (Episode Dramatique en un Acte)." With Notes by H. E. Berthon. 48 pp. (Hachette.) 6d.

H. de Gorsseet and J. Jacquin: "La Jeunesse de Cyrano de Bergerac." Edited by T. B. Rudmose Brown and K. M. Linton. With Vocabulary by H. A. Jackson. 384 pp. (Hachette.) 3s.

Maxime du Camp: "La Dette de Jeu." With Notes, Vocabulary, etc., by H. E. Berthon. 180 pp. (Hachette.) 2s.

George Sand: "La Petite Fadette." With Notes, Vocabulary, etc., by F. W. M. Draper. 264 pp. (Hachette.) 2s.

De Bawr: "Michel Perrin." (Hachette's Popular French Authors.) 64 pp. (Hachette.) 6d.

Prosper Mérimée: "Tamango." (Hachette's Popular French Authors.) 64 pp. (Hachette.) 6d.

A. Daudet: "Cinq Contes Choisis tirés des 'Lettres de Mon Moulin.'" 96 pp. (Hachette.) 1s.

Marc Ceppi: "Nouveaux Contes faciles." (Hachette's French Readers on the Direct Method.) 104 pp. (Hachette.) 1s.

Maupassant: "Trois Contes." (Hachette's French Readers on the Direct Method.) 104 pp. (Hachette.) 1s.

A. Daudet: "La Dernière Classe: L'Espion." (Hachette's Popular French Authors.) 60 pp. (Hachette.) 6d.

"Méthode Directe pour l'Enseignement de la Langue française." By C. Schivertzer and E. Simonnot. 156 pp. (Hachette.) 2s.

"French Lessons on the Direct Method—Senior Course." By Marc Ceppi. 192 pp. (Hachette.) 2s.

"Graduated Practice in Free French Composition." By E. T. Schoedlin. 102 pp. (Hachette.) 2s.

"Easy French Poems for Reading and Dictation." By E. Duhamel. 64 pp. (Hachette.) 6d.

"Extracts for Translation into French (Medium)." By P. Edwards. 48 pp. (Hachette.) 8d.

"L'Anglais par Vous-Même." By Marc de Valette. 100 pp. (Hachette.) 3s.

"Introduction to Grammar (French and English)." By A. Bernon. 64 pp. (Hachette.) 8d.

"English Lessons on the Gouin Method." First Book for Children. By F. Thémoïn and Yates. 126 pp. (Hachette.) 1s. 6d.

"Elementary French Words for Red Cross Workers." P. Shaw-Jeffrey. New and revised edition. 32 pp. (Hachette.) 6d.

"Elementary German Words for Red Cross Workers." By P. Shaw-Jeffrey. New and revised edition. 32 pp. (Hachette.) 6d.

"A Pocket Dictionary of the French and English Languages." By Léon Contanseau. New and revised edition. (Longmans.) 1s. 6d. net. Special edition for travellers and pocket use, bound in leather tuck, 3s. 6d. net.

"Russian Self-Taught." By C. A. Thimm and J. Marshall. Fifth edition. 134 pp. (Marlborough.) 2s.; cloth, 2s. 6d.

"Hindustani Self-Taught." By Capt. C. A. Thimm and J. F. Blumhardt. Fifth edition. 112 pp. (Marlborough.) 2s.; cloth, 2s. 6d.

Classics.

"Oxford Elementary Latin Readers: The Fall of Troy." By W. D. Lowe. 96 pp. (Clarendon Press.) 1s. 6d.

"A First Latin Grammar for Schools." By E. A. Sonnenschein. 126 pp. (Clarendon Press.) 1s. 6d.

"A Latin Syntax for Schools." By E. A. Sonnenschein. 168 pp. (Clarendon Press.) 1s. 6d.

English: Grammar, Composition, Literature.

Chaucer: "The Knight's Tale." With Introduction and Glossary. By R. J. Cunliffe. (The Plain Text Poets.) 96 pp. (Blackie.) 6d.

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Ambiguous Case in the Congruency of Triangles.

THE following proof for the ambiguous case in the congruency of triangles may be of interest. It arose quite naturally during some revision work last summer term. An account of the exact details leading up to the proof would take too much space, but, so far as I know, it is quite original (Fig. 1).

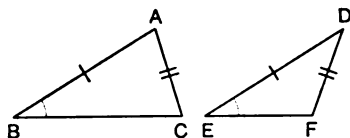


FIG. 1.

Data.—ABC and DEF are two triangles having

$$\begin{aligned} AB &= DE \\ AC &= DF \\ \angle ABC &= \angle DEF \end{aligned}$$

Required to prove that either

- (1) The Δ 's are congruent, or
- (2) The \angle 's ACB and DFE are supplementary.

Proof.—Place DF on AC, and E on the side of AC remote from B; then, either EF is in the same straight line as BC, or it is not (Fig. 2).

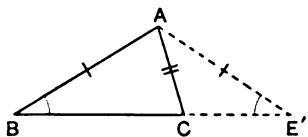


FIG. 2.

Case I.—If EF is in the same straight line as BC, it is obvious that the angles ACB and DFE (ACE) are supplementary, and the Δ 's are not congruent.

Case II.—If BC and CE' (Fig. 3) are not in the same straight line, join BE'.

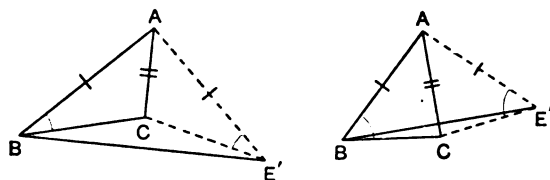


FIG. 3.

Then, since $AB = AE'$,
 $\angle ABE' = \angle AE'B$ (Isosceles Δ)
 But $\angle ABC = \angle AE'C$ (Hyp.)
 \therefore By addition or subtraction
 $\angle CBE' = \angle CE'B$
 $\therefore CB = CE'$

$\therefore \Delta$'s ABC and ACE' have three sides of one equal respectively to the three sides of the other, and are therefore congruent. S. LISTER.

Royal Naval College, Greenwich.

Women for Farm Work.

THE Women's Defence Relief Corps during last harvest sent out gangs of women to work on the land; many of them were schoolmistresses. Their work was so good that farmers who employed us have offered us contracts for the harvest (fruit, hops, hay, corn, roots, etc.) of next year.

As it is evident there will be a greater shortage of labour next year, we are anxious to be ready—to have the names of those willing to do this work registered for employment, with dates as to what time they can give. Our work last year was tentative, and we had not then the organisation to cope with the numbers of those who offered. We are therefore starting in good time.

I trust you will be kind enough to make known that all who wish to enrol with us for work during the whole or any part of harvest-time should write to Miss Creamer, hon. sec., Studio, 10, Abbey Road, London, N.W.

We have just given a lecture on the experiences as farm labourers of two of our members (a lecture we have already been asked to repeat), and Lord Selborne writes that he "trusts the lecture will help the corps to further efforts in the work which it has undertaken to supply women workers on the land in place of the men whose services are required in the defence of our country."

We are most anxious to make these "further efforts." C. A. DAWSON SCOTT.

Wastehills, St. Merryn, Cornwall.

The School World.

A Monthly Magazine of Educational Work and Progress.

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DECEMBER, 1915.

SIXPENCE.

TRUE AND FALSE ECONOMY.

OF the need of strict economy at the present time, both in public and in private expenditure, there can be no question. The point does not need to be argued. A heavy enough burden is being unavoidably piled up for ourselves and our descendants, and we must not risk the proverbial last straws that are apt to break the camel's back. So far all are agreed. But in nothing is the wise man so distinguished from the fool as in the way in which he sets about economising. The fool begins to lay about him indiscriminately; the wise man asks himself what he can best dispense with, and where the usual outlay can best be reduced, without lasting injury, or with as little lasting injury as may be, to those dependent on him. He is therefore careful to differentiate between superfluities and necessities; and not only so, but between necessities of the first order and those of the second order. Are these principles being kept steadily and consistently in view in our present attempts at public economy? Nay, are they being regarded with a decent show of respect?

At the risk of being counted among the "professional whimperers," we say that a due sense of the value of education cannot be claimed as one of the typical virtues of the Englishman. He has no implicit faith in the value of education for its own sake, and so he needs often to remind himself, and sometimes to be sharply reminded, that at any rate it *pays*. He refused to regard secondary and technical education as a national concern until long after it had so been regarded on the Continent, and until it became clear to the blindest that he was being outdistanced in many of the markets of the world. And even now, when he thinks of public economy, his thoughts fly first of all to education, and chiefly perhaps to higher education. He cannot rid himself of the lurking belief that this education is really in the nature of a luxury. And

his suspicions are perhaps strengthened when he sees to what purposes Germany has turned her carefully organised system of instruction. It is true, of course, that knowledge, albeit a wonderful instrument, is only an instrument, which can, alas! be turned to base as well as to noble ends. But the instrument is indispensable, and even in the present stress it should be kept bright and clean and fit for use. That it should be well used is guaranteed so long as we maintain lofty ideals of public and international morality.

We conceive, then, that the way of crippling education and making the children suffer is certainly not the way by which the German peril is ultimately going to be defeated. It may be said that in suspending progress and in actually retrogressing we are only doing what Germany herself must be doing at the present time. Let it be remembered, however, that, especially in regard to middle and higher education, Germany was so far ahead of us before the war that she is far better able to afford a period of slackness than we are. Take a single case in point. In the early part of 1914 Mr. Martin Briggs visited Germany and Austria, under the auspices of the Royal Institute of British Architects, for the purpose of reporting upon continuation school buildings in those countries. The last pages of his report were written only a few weeks before the war began. The writer half apologises for presenting an extended account of the work of our enemies, but he significantly adds that "the system of continuation schools in Germany and Austria has contributed materially to the extraordinary state of technical efficiency now confronting us." Exactly so; and what is here said of one grade of education may safely be said of all grades, except perhaps the purely primary. We simply cannot afford to let any part of our educational system suffer more than is absolutely unavoidable.

But how, for example, does the London County Council approach the problem of eco-

nomy? It first makes up its mind that education must suffer; and we shall be interested to see whether other departments of the Council's activities are made to suffer in like degree. It then apparently makes up its mind that a certain sum must suffice for education; which seems like making up one's mind that a certain length of khaki cloth must suffice for a soldier's outfit, whether or not the resulting outfit be enough to protect him from the blasts of the coming winter. We do not complain of the most ruthless sacrifice of superfluities. We believe that these existed chiefly on the administrative side and in the multiplication of highly-paid officials, and, of course, such extravagance ought never to have existed at all. Let it be curtailed by all means. Nor do we complain of curtailment in what we have described as necessities of the second degree, such as painting and cleaning, certain improvements in buildings, and the provision of medals and prizes. But we plead for what we believe to be necessities of the first degree. We ask, for instance, whether it is worthy of London, or worthy of a great nation even at the present crisis, to save a paltry thousand pounds on dental treatment, or indeed to save anything on the medical treatment of children, unless it can be proved that the money was being wasted before the war broke out.

We plead for the utmost circumspection in reducing the teaching staffs in schools and colleges, because the teacher is the pivot upon which the whole thing turns, and if the teaching staff is inefficient or insufficient, all the inspection and organisation in the world cannot prevent disaster. We plead, too, for the tenderest possible treatment of the Council's polytechnics and aided institutions, because we fear that a policy of scrapping and crippling at the present stage may *not* be followed by a policy of reconstruction at a later stage, when the pinch of poverty will begin to be really felt; and because we fear, therefore, that the nation may ultimately be struck in a vital part. We do not mean to gibbet one particular authority, which we have taken only as an example. On the contrary, if our words could reach them all, from the Board of Education and the Treasury down to the most obscure local authority in the land, we would plead with them to be wise in time in maintaining as little impaired as possible that subtle but real line of national defence—education.

A Treatise on Light. By Dr. R. A. Houston. 478 pp. (Longmans.) 7s. 6d. net.—This volume is intended for students who have been through a first year's course in physics. The treatment of the subject is very thorough, and the text includes the results of all the most important recent investigations. A good knowledge of mathematics is assumed.

THE PRESENT POSITION OF CADET CORPS IN SECONDARY SCHOOLS.

By G. A. LE CHAVETOIS, M.A.

St. Olave's Grammar School, Tower Bridge, S.E.

THERE is in the wall of one of our old English churches the tomb of one who wished to be buried "neither in the church nor without it, neither under the ground nor above it," and one might well compare a Cadet Corps at the present time with this extraordinary tomb.

When the war broke out, the authorities of many secondary schools not possessing Cadet Corps or furnishing contingents of the O.T.C., wished, naturally, to form some military organisation by which they could prepare their older boys to take their part, if the war should be long continued. The result was that the War Office was inundated with requests for sanction to form junior contingents of the O.T.C. For some time past, the Army Council had apparently been doubtful of the value of some of the junior contingents already furnished, and in view of this doubt and of a natural wish to avoid extra expense and organisation at a time of great pressure, reply was sent in nearly every case that the War Office was not for the time prepared to sanction the formation of any new contingents.

At the same time the attention of applicants was called to the regulations for Cadet Corps. These regulations were very elastic—it was not even essential for the cadets to have uniform—and very soon Cadet Corps sprang up like mushrooms. The great thing was not to worry the Territorial Associations or the War Office too much, and they would not worry you. For example, the officers of some corps did not trouble the authorities for permission, and now wear the badge of the regiment to which their corps is attached; others asked for permission and were refused it. In most cases the requirements of the Territorial Associations were very slight, and after sanctioning the formation of the different corps the T.F.A. of the county generally contented itself with sending copies of Army Orders at regular intervals.

Now the Cadet Corps organisation is not primarily intended for secondary schools, and the following weaknesses were soon apparent:—

1. No organisation exists to control Cadet Corps or secure uniformity in their work. They may be utterly slack or desperately keen.

2. The object of Cadet Corps is to provide men for the ranks of Territorial units. Many of the secondary school Cadet Corps which

have recently been raised, include a considerable proportion of boys of an age and type well suited for holding commissions. This is particularly hard when members of the more efficient corps, which have really done work of O.T.C. standard, apply for commissions. So vague is the term "Cadet Corps" that their experience counts as little or nothing to them.

3. No standard tests, such as Certificate A, exist for cadets to attempt.

4. Cadet commissions are granted, in London at any rate, with reckless generosity, without any apparent sense of proportion and without any test as to efficiency. Two examples will serve to illustrate this. A school in North London, with a corps of 150 uniformed cadets and 30 un-uniformed, possesses three captains and four full lieutenants. Another corps, 120 strong, was offered commissions for a major, a captain, and five full lieutenants. Some of these officers had had no military training or experience, yet they were thus allowed to pass over the lowest commissioned rank, and now wear a uniform, differing only by a microscopical "C" on the collar from that of a regular officer. In any combined Cadet Corps Field Day, or Camp, it is hopeless to attempt to settle precedence or seniority. A 2nd lieutenant in one corps may be in every way much better qualified than one ranking as captain in another corps.

5. Cadet Corps officers, as such, have no military standing. In some cases this is certainly just as well, but in others there is undoubtedly much unfairness. Several O.T.C. and Cadet Corps officers have, during the recent holidays, offered their services with various units in training. A Cadet Corps officer, however, unlike an officer of the O.T.C., has no disciplinary power, and can apparently receive no pay or allowance, however efficient and useful he may be.

A Cadet Corps receives no grant from the War Office, and its officers receive no allowance towards the cost of uniform. The result of this is that either the equipment and the activities of the corps are limited, because of insufficient funds, or, on the principle that the payer of the piper calls the tune, those who have to do the work of the corps are to a large extent at the beck and call of the school governors, who pay part or all of the corps' expenses.

These and other weaknesses are apparent to anyone who has had to do with the working of a Cadet Corps in a secondary school. The War Office authorities must realise the existence of them, and it is more than likely that at the conclusion of the present hostilities

the whole matter will be overhauled. In the meantime, however, it would seem that action must be taken by the officers of the corps themselves, and in various quarters steps have already been taken in the direction of co-operation and uniformity. A meeting has been arranged by Colonel Errington, of the Inns of Court O.T.C., which has, as one of the main items for discussion, the question of the "standardising of training in the O.T.C." There has been circulated, too, the draft report of a sub-committee of the Assistant-masters' Association appointed to consider the subject of military training in schools, and though this sub-committee has set itself a wider subject for consideration, it has necessarily touched on the present position of Cadet Corps and O.T.C. contingents in secondary schools.

The Inns of Court meeting, however, and the A.M.A. sub-committee, are concerned mainly with the future. A committee of the officers of London secondary schools Cadet Corps has been formed to deal with the present situation and further the aims and lessen the difficulties which those corps have in common. This committee is fortunate in having as chairman one who has had many years' experience with the O.T.C. contingent of one of the best-known public schools in London. It has already arranged and carried out a shooting competition between the corps represented, and discussed amongst other things the possibility of combined field days and combined camps. This committee is thus attempting in London the work which might well be, and in some cases has been, done by the Territorial Association of the county. In some counties the Cadet Corps have been organised as definite units of a battalion, and the organisation of the battalion has been considered in the granting of Cadet Corps commissions.

At the conclusion of the war it is probable that the whole question of military education in schools will be considered nationally. The question will be difficult. As the A.M.A. draft report aptly points out, "It would be futile to approach the question solely, or even primarily, from the side of the school, and formulate a scheme which, while it might be practicable, and, possibly, useful educationally, might prove to be valueless from the military point of view." Whatever scheme is evolved finally, it seems reasonable to expect that the public and secondary schools, which keep a considerable proportion of boys to the ages of eighteen and nineteen, should be required to furnish something in the nature of an Officers Training Corps, while the smaller secondary schools and perhaps higher ele-

mentary schools should be organised as units of battalions and brigades to prepare men to take their places in the ranks for military service with the minimum of training. Of course, the type of boy in a school, as well as the age of the older boys, would have to be considered, and to make a satisfactory ruling on this point will be extremely difficult.

One thing is clear. The present situation is most unsatisfactory and full of anomalies. The recent review of Cadet Corps in Hyde Park showed how much and how little the term Cadet Corps may mean. In that review there was a motley collection of corps ranging from a keen but unequipped and un-uniformed band of youngsters organised by some church institute or mission, to smart, well-equipped bodies of secondary school boys, many of them quite old enough to hold commissions, doing O.T.C. work, but, by decree of the War Office, denied the title of, or recognition as, contingents of the Officers Training Corps.

If any work of real military value is to be done by our secondary schools, it can only be achieved by giving uniform treatment and equal attention to all school corps, which have to face approximately the same conditions and are definitely working for the same object.

(The above article was written before the appearance in the October number of the *A.M.A.* of a paper by a member of the Headmasters' Association on the subject of the Cadet Corps system. The writer of that paper rightly emphasises the fact that the weaknesses of the system are inherent to it, and are not the result of exceptional conditions caused by the war.)

THE PLIGHT OF OUR PRIMARY EDUCATION.

AMONG all the many instances of strain and inconvenience said to be due to the war, there is none more likely to be overlooked than that of the scarcity of teachers for the elementary schools of England, both now and in view of future needs. The evil may almost be said to have become chronic, and like other chronic complaints, to have been accepted and regarded as inevitable, like rheumatism.

Now, in other matters, necessity and scarcity have the magic power of calling forth the supply of tolerable substitutes. Since the war began, we have faced the certainty of a shortage of many things that hitherto had been plentiful enough, about the origin of which we took little thought and to replace which we have begun to make experiments. Kelp to make potash with is a case in point. One enterprising firm even claims to have produced a satisfactory Eau de Cologne. There is little doubt that in material things necessity will do its pro-

verbial work, and we shall somehow get our physical needs supplied, just as the French did when Napoleon evoked the use of roasted chicory to take the place of coffee.

The case is entirely different with regard to the supply of human beings for any special type of work. It needs no prophetic gift to foresee the most gigantic upheaval of the old lines of custom, and even of privilege, or, indeed, to realise that there will be huge gaps in the ranks of specialised and highly qualified men.

But the dearth of primary teachers is not a case of a scarcity due to the war. The trouble began before 1914. There does exist and there does persist a serious decrease in the number of would-be teachers in the schools. A recent special publication of the Board of Education deals with the question and gives a plain statement of the facts. In the year 1913-14, over the whole country, the production of fresh teachers fell by 2.4 per cent. below the absolute minimum required merely to replace natural wastage, and apparently allowing no provision for growth of population. It is not unnatural to characterise this fact as disquieting.

These, however, are disquieting times. Our whole national fabric has been shaken, our whole outlook changed. Decisions, which in normal years would have cost us weary months of discussion, adjournment, and delay, have been made, and made well, in an hour. Principles have swiftly been put into practice. Action has come into its own. But it has not been quite what it all seemed. Swiftmess of execution has only been possible because serious and deliberate thought lay behind. Improvisation is no word to apply to the miracles of accomplishment which we have seen performed by our Expeditionary Forces. It is only the bare truth to say that the rude shocks of world-wide battle struck us as a nation into forceful and effective action, but that this was so because, in our own peculiar roundabout fashion, we had for years been hammering away at ourselves. There are, undoubtedly, more direct ways than ours of raising an army of a million volunteers, but that miracle and other even greater marvels were performed, firstly because we were shaken up, but secondly because we had already stirred ourselves.

In our primary education there has not been the same wholesome activity. Now the war has come as a tremendous factor in every national problem, influencing the whole of our society now and henceforth, and in itself rousing and challenging all of us to undreamt-of exertions. What is to be the result on the schools of the people of England?

So far as can be seen in the official advice given by the Board of Education, it is going to be a very deplorable retrograde movement. To solve the present difficulty, the Board has restored to Local Education Authorities the power to enlarge and develop the *pupil-teacher system*, and there are not wanting advocates who plead for this as a good thing in itself, as well as a cheap way of finding future teachers, especially in rural areas.

The Board must have been feeling particularly hopeless and uninspired on the day when that policy was approved. I venture to say with all the emphasis possible that it is a deplorable error, fraught with evil, even when seemingly successful.

Of course, there is no gainsaying the statement that in certain districts the relaxation of the Board's rule as to attendance at a secondary school, and the restoration of the pupil-teacher system has brought in more candidates. In Norfolk, for instance, the entries doubled in 1914. But even if this were to happen everywhere, what proof is there that these same persons would hold to their engagements and duly emerge as trained and certificated teachers? Times are changed since the days when no other path lay before the pupil teacher but the training college followed by the classroom of an elementary school; and even in those days the leakage of pupil teachers into lower Civil Service posts was quite appreciable. I do not believe this stimulus can be other than temporary. Young people, especially girls, everywhere, and not only in the secondary schools, see many more and many better openings than school teaching, when they find themselves better instructed than their fellows. Moreover, there is no binding obligation on a training college student to become a teacher in an elementary school.

But I question this policy of trying to fill the ranks by reviving and enlarging the discredited and discarded pupil-teacher system, because I believe it to be against all educational progress. To explain this I must go rather far afield.

We are being shaken to our foundations and we have done marvels of rapid constructive effort. But in the volume of activities that have surged into fuller and more vigorous life we cannot reckon any portion of our national educational system. So far the practical effect of the war has been to drain away hundreds of young men and boys from the centres of higher education. There are unmistakable signs of threatened paralysis elsewhere, and in no place more plainly than in our primary education. The pressing need for economy of resources has already become a pretext for reduction of expenditure, merely as expendi-

ture, and even in London the Authority has decided to save a little of the ratepayers' money by reducing the cleaning of classroom windows! If it were not pathetic, it would be laughable. But it is a blazing danger-signal, and means something which may soon be tragic.

One of the minor tragedies of the war undoubtedly was our late Education Minister's acceptance of a big pension at such a time. His removal from his office, and the way in which unhappily, and it may be inadvertently, the Prime Minister did it, were deep and significant calamities. Nothing else shows so plainly to all who care to note it, the estimate placed upon the position of the head of our State system of education. It is irrelevant at this juncture, though true, to sneer and say we have neither education nor a system. Mr. Pease was moved like a pawn at chess; another M.P. was given his seat in the Cabinet, his salary and—his duties, and Mr. Pease disappeared. "A slight, unmeritable" post, to be held only by those who are "meet to be sent on errands" is that of the official guardian of our children's mental, moral, and physical training. It is difficult to write calmly about this. Our men on sea and land and in the air are laying down their lives, sacrificing their health, risking their all—for their country, we say. Their country, our country, is not a geographical expression, a few hills and plains and rivers, or even two score grey cathedrals; it is the young children born and growing up in this England to-day, to be worthy the race from which we are all sprung. How, then, can we, dare we, even in the august name of economy, give these children less even than their fathers had of education?

The pupil-teacher system was cheap, or seemed so. For that reason alone it is likely to fascinate local authorities, honestly striving to distribute their retrenchments as widely as possible. Worse still, the pupil-teacher system made the existence of huge classes possible, because by early practice as assistants in the profoundly vicious art of managing big numbers and holding the attention of masses of children, the future teachers, undismayed, took on such multitudes to be "taught" together as none but a drill-sergeant ought to have to cope with. It is not only impossible for children to learn in classes so large as we still permit in our elementary schools, but it ought to be impossible to attempt to make them.

It is often said that we in England do not take kindly to revolutions. But there was nothing revolutionary in the Board's former considered and deliberate attitude on the pupil-teacher question. Common honesty justified

it in saying that, indeed, there was "a better way" than that, for the pupil-teacher system, if I mistake not, was introduced here at the very moment when the Dutch, who had tried it, were abandoning it as unsound! It was eight years ago that the Board pointed this out, and now, in the second year of the great war, we are threatened with a thoroughly reactionary movement. It is not too much to say that our hopes for the future are at stake.

The danger menacing England from this inevitable lowering of her already low general educational level is due to no one particular cause. The factors combined in the incredibly intricate tangle of activities and jurisdictions, which, when added together, make up our national school system, are individually blameless, except in so far as ignorance is always culpable when it usurps the functions of knowledge. In many of the rural areas of England instructed opinion can scarcely be said to exist. Education in such districts appears to the ratepayer as a costly and burdensome outlay, grossly and obviously unremunerative in its effects. Nor can one see how this can be altered so long as things remain as they are, and especially while our present haphazard arrangements as to imperial and local taxation continue.

English people love justice, worship it, will die for it. What would one not give to make them see and feel *the injustice* that is daily done in their own country, where neither by hook nor by crook can a child be *sure* of getting a sound, early schooling! At *three years of age*—(think of it, you who played about in garden and field and nursery until you were seven) he or she may in one place be herded into the infants' classroom with some scores of coevals, there to attend to orders, to act in unison with others, and to drift into the torpor and docility essential to the orderly management of droves of human beings. In another place, he or she may chance to become one of a mob of little children of various ages and stages of progress, all in the charge of one harassed teacher. From nine schools, perhaps, he and she may emerge at fourteen alert, keen, ready to acquire for themselves, but from the other ninety-one they will gladly escape on the stroke of their fourteenth birthday, dull and blunted, and not even equipped with the one weapon of consequence in these days of cheap, good literature, the power to read and to gain knowledge from books. Why should these differences be? We do not sell them halfpenny postcards at the Post Office in Tewkesbury of a different quality from those we sell in Willesden. Why should English children in some English districts grow up handicapped by ignorance, and in some others

have a decent start? I am not comparing any real places.

For this unfairness there can be no remedy in letting things drift on as they are, still less in retracing our steps as, alas! our Board of Education in its despair and impotence gives localities its permission to do.

Never in our history have we as a nation been so united as now; never before have we shown such generosity to each other; never before have gentle and simple been drawn together so closely, or learnt so readily the good that neither knew nor suspected in the other. All of us are wiser, and probably humbler, than we were a year ago.

From this matchless opportunity two things, at least, have stood out with overwhelming clearness. The first is the magnificent character of the average British soldier, I mean of the man who either was a private when war broke out, or who naturally remains in the ranks in all circumstances. Sweet-natured, upright, kindly, courteous he has shown himself to be, and capable, too, of taking responsibility and rising to an emergency. It has not been in the public schools alone, where the "kids" of last year have developed into efficient heads of houses in this time of scarcity of big fellows: it is everywhere where the call for prompt action has come. The second thing, however, which has been equally clear is that this good soldier is uncomfortably ignorant, and that his home folk are pathetically lacking in the knowledge of almost everything that would help them to follow intelligently the course of events.

Like that of the average public school boy, the average private's education has not been adequate. His ability to profit by books is negligible. As has lately been said of secondary schools: "There has been a tendency to glorify the development of the will, but at the same time to suppress the feelings and starve the intellect."

Evidence is abundant that our English soldiers stand out in contrast to others in their dependence on what they hear as to matters of fact, rather than on what they might read and find out for themselves. Our overseas men, it is said, are "voracious readers," but in the Y.M.C.A. huts in this country the last thing the young soldier asks for is a book.

And yet he is able and willing to learn much that must be dishearteningly dull and difficult for him, and one cannot write words to describe what he is willing to do and to endure.

Surely, therefore, we ought to deal fairly by the children who will inherit that which our own flesh and blood and our kith and kin are at this moment fighting and dying for.

Will no statesman arise, like Sidney Herbert in the Crimean War, brave enough and far-sighted enough to do for our private soldiers' children's schools what he did for our soldiers' hospitals?

Can no public opinion be aroused strong enough to say: "*Nationalise our schools*"? Take the cost and care of them alike into larger hands than those of county authorities. Boldly employ competent women in the highest and most influential situations. Do away with the anomaly of having not one female director of education at the head of any county, notwithstanding the fact that half the pupils and more than half the teachers in the area are of that sex. Rid us of the nightmare of Bradley Headstones and his like. Make the calling of all teachers really honourable. Place responsibility and power, especially disciplinary power, in the hands of the head of an elementary school as you would in a secondary school. Use some of the active young inspectors as actual teachers where there is a shortage of heads. Let us, indeed, strip ourselves of luxuries now and henceforth, too, if need be, but in the name of justice and of human progress, do not let us take the children's bread away from them.

The teacher's calling is difficult and exhausting, but it has attractions for the right type of person, especially for women. There would be no lack of candidates for every school in the kingdom if every school in the kingdom were what it ought to be.

M. S. W.

THE WAR AND THE TEACHING OF SCIENCE.

By C. W. P. ROGERS, B.Sc., F.C.P.
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THE profound bearing of scientific work upon the conditions and conduct of modern warfare, the intimate connection between laboratory and battlefield, has been demonstrated during the past year in an untold variety of ways. The importance and value of scientific investigations and their applications—more, their absolute necessity—to the very existence of the nation, has been brought home to us with tragic force. In these days of high explosives, incendiary bombs, hand grenades, warfare by gassing, and the like; when "lyddite," "mélinite," "trinitrotoluene," and other technical terms are on everybody's tongue; when the man in the street can discuss the explosive products of cotton (and the consequent political and international importance of that material); when every popular periodical has its articles dealing with the nature of "propellants" and "disruptives"; the depend-

ence of our country's safety upon the skill of its chemists is being realised even by the average layman.

In a more or less vague way he has always recognised that many of the comforts and benefits that he enjoys are due, he knows not how, to the work and discoveries of men of science. He now also sees that, in addition to its supplying the means for ease and comfort, progress and enjoyment, he is in debt to science for the powers it gives him of offence and defence.

This is so much to the good. But even yet he does not realise—nor, unfortunately, have those in authority realised until very recently—how greatly commercial advancement and industrial prosperity depend upon the efforts of workers in science. It is important that we should understand how England has suffered through her neglect in former days to seize upon the supreme *commercial* value of science. Germany's rapid industrial progress has undoubtedly been largely due to her realisation of the close and necessary inter-connection between science and industry. Through close co-operation between the universities and manufacturers, and Government assistance in research work, Germany has gained practically sole control of many articles of commerce necessary to us, articles which we might easily produce ourselves; as, for example, organic chemicals for photography, scents and perfumes, drugs, disinfectants; glass and porcelain ware; and pure chemicals of all kinds. At the same time, our textile, printing, and painting industries, as well as others, make use in certain of their operations of dyes obtained from her.

Industry has thus in many directions necessarily felt the pinch of the present war; and of the people not directly engaged in trade science teachers have especially had cause to realise the situation. With the stoppage of German exports their usual supplies of glass and porcelain apparatus, filter-papers, and the rest, have been unobtainable. That such articles *can* be manufactured in England is shown by the fact that after a period of trial and experiment British substitutes were placed upon the market.

The seriousness of the position was especially well dealt with by Prof. Perkin in his presidential address to the Chemical Society last February. He laid stress upon the need for greater co-ordination between the schools, universities, and industries, the necessity for research work on the part of all science students, the desirability of State and industrial promotion of research, and the fuller treatment of organic chemistry. And it is cheering to note that science seems at last to be coming

into its own. On July 13th the *Times* announced that British Dyes, Ltd., had instituted a research department, which in its turn appointed a technical committee and an advisory council; while later in the month an Inventions Board, consisting of representative men of science, was appointed by the Government.

All this is of profound interest and importance for science teachers. What is its meaning for our work? In reply I would urge that it points to the necessity for a reconsideration of the curriculum. We have had a reformation in *method*, so that in some cases science teaching is now almost scientific; what we need to-day is a reformation of *material*. After all, for what purposes do we teach science? Perhaps the following may be allowed to serve as a working basis:—

1. To train in powers of observation and description.
2. To impart a knowledge of scientific method and an ability to apply it to any given data.
3. To supply a certain store of facts, so as to provide a sufficient basis for later more advanced work.
4. In some cases, so to combine 1, 2, and 3 as to fit pupils to embark on a scientific career with some hope of success.

Our selection of the curriculum must be such as to subserve these ends.

It may be urged that our object is merely to impart a knowledge of scientific method; so that any one science is as good as another, if only it be treated scientifically. It can certainly be granted that this is the chief aim. But it is not possible to be pure idealists. There are other factors to consider—usefulness to the individual, usefulness to the State. The present war has surely forced upon us the truth that the State requires much of science, and that science has much to offer to the State. Science, as well as righteousness, “exalteth a nation.”

Our science teaching must be coloured by the thought that we are rearing citizens as well as men of science. All branches of science can be taught so as to indicate the principles of scientific method, and thus secure a proper scientific training. If, therefore, the work in addition have a definite, direct relation to the present-day life of man, so much the better. It is also worth remembering that reference to external realities in itself is a great source of stimulus and interest, while it likewise creates links for initial apprehension and later reproduction by the memory.

Now have we the science curriculum best calculated to meet all these wants? What does it, generally speaking, consist of? The theoretical and practical inorganic chemistry

of the ordinary text-book, perhaps a little shadowy organic chemistry in the top form, and some elementary heat and light. In the first place, organic chemistry should occupy a much more prominent position. Prof. Perkin urges that one of the chief reasons for the falling-off of English industries connected with the production or use of organic materials is the meagre training given by English universities in this branch of science, despite its importance in many industrial operations. The subject, again, is of profound interest in itself, since progress in the obscure problems of life must depend upon a knowledge of its processes. Nor can anyone question the mental training given by its study. It makes supreme demands upon the memory, patience, and perseverance of the student. At the same time, it affords a striking example of a good scientific classification. Lastly, it powerfully aids the development of the reasoning and inductive powers. Much might be done in the upper forms of schools by the study of typical substances and their transformations. The very co-ordination between the different divisions of the subject will serve as a basis for interest. A clear study of elementary organic chemistry would be of far greater mental value than the collection of more or less isolated facts relating first to one element, then to another, that usually stands for inorganic chemistry in schools. At the same time, we should be supplying facts of practical importance to those who wish to follow a medical or scientific career—brewing, dyeing, pharmacy, analysis of foods, bio-chemistry, and so on.

But in inorganic chemistry also there are possibilities for reform. Much more might be done to “industrialise” its teaching. In so doing we should not lose anything of value, but be the gainers. It would bring our pupils into closer touch with living realities, show them how intimately their theoretical principles bear upon the facts of life; it would save them from the thought that actual processes are mere magnifications of laboratory preparations; it would introduce them to the special difficulties that have to be overcome under practical conditions and teach them how materials and processes have to be modified under the stress of those conditions; it would teach them the importance of investigating the at present often neglected subsidiary products of a reaction. They begin their study of science by an inquiry into everyday phenomena. As they climb the school the work frequently becomes touched with a sense of detachment from the facts of life. If they could see their text-book principles as the basis of some industrial operation, their interest and imagination would be more highly stimulated.

Unfortunately, the average text-book gives little or no clue to this connection, and the teacher, in the majority of cases, probably does not introduce this side of the work to their notice with any enthusiasm; so that the boys lose the inspiration that comes from trying to realise how to overcome difficulties which do not enter into laboratory and lecture practice. Much may be done by way of charts and by accounts of industrial processes by the teacher, gathered from his own personal knowledge or from books such as Molinari's "Industrial Chemistry" (Churchill). Another excellent scheme is to arrange visits to works of various kinds, dividing those who go into small parties. This is more for upper forms; but even in the elementary classes greater emphasis might be laid upon the applications of chemical knowledge to industry, with the consequent stimulus derived from seeing that the work has a living, practical bearing.

The average physics of schools is perhaps even less satisfactory. Speaking generally, a great deal too much stress is laid upon "heat and light." The latter subject in particular leaves but the vaguest impressions upon many boys' minds. It is notoriously difficult of presentation for proper assimilation, and strikingly barren in results of any value. But why need it be taught? For my own part, I have far greater faith in an experimental study of "general" physics—properties of matter, friction, measurement of time, Newton's laws of motion, simple machines, and the like. There is not room for both, and it is simply a question as to which we can best let go. Only recently a university demonstrator in physics told me that the ignorance of "general" physics amongst new undergraduates is a great handicap to their work.

For the boy who finishes his education at school it would be of much greater benefit to give him a course in this general work, dealing with phenomena that make a stronger appeal to him, than, for example, to try to make him realise rays or waves of light that he cannot see or picture, to perform experiments with pins that carry no conviction to his mind, or to deal with virtual images that must elude his understanding as much as they elude projection upon a screen for him to see. It is not even as though the study of heat and light had any advantages to offer in providing better insight into scientific method, or in being of more absorbing and striking historical interest. In regard to both of these points, "general" physics more than holds its own. University authorities might aid in this reform by substituting "general" physics for heat and light in their elementary examinations. As to heat and light for those who intend to proceed to

the universities, a sufficient acquaintance could readily be gained in the additional time afforded these boys in the upper forms.

One more point. Many fears have been expressed this year as to the likelihood of an outbreak of disease throughout Europe, owing to the vast number of dead and decaying bodies scattered on every battlefield, and the resultant breeding of flies and other carriers of infection. Dealing with the whole question of the relation of the insect-world to the human race, Sir Harry Johnston makes a forcible appeal in the *Nineteenth Century* for July for more widespread knowledge of the nature and habits of insects. The hostile forms of Arthropods—many species of worms, snails, slugs, insects, and ticks—attack man himself or his domestic creatures or his food supplies, or else inoculate one or the other of these with germs of disease. Sir Harry Johnston holds that if we could get rid of the harmful forms of fly, mosquito, flea, louse, and so on, we should eliminate nearly all the diseases of animals and poultry, besides malaria, plague, scarlet fever, and many others in man: possibly even cancer. He also states that attacks on harmful bugs, midges, and beetles would increase the world's food supply a hundredfold. But not all insects are pernicious; some attack these enemies of ours and thus are beneficial. Indiscriminate slaughter is as foolish as wanton leniency. It is thus of immense importance that all classes should know which insects ought to be killed and which preserved. They should learn also to value as allies birds and those reptiles which are harmless to man but inimical to insects. There should be a universal campaign for the preservation of birds, lizards, fresh-water fish, ladybirds, dragon-flies, spiders, bees, and wasps.

How is the necessary information to be conveyed? For many reasons there is little chance of our getting hold of men and women. We are thus thrown back upon the children; and we may with advantage attend to Sir Harry Johnston's claim for the teaching of elementary entomology in schools, particularly in view of the opinion of many science teachers (to quote Dr. Moss) that nature study alone is suited for the scientific work of children under fifteen years of age. If this were agreed to, the study of insect-life would take the place of the elementary physics and chemistry syllabus; if not, it is rather difficult to see what subject of the curriculum could be displaced. That is a serious difficulty, but one still more serious presents itself. Clearly, no very rigorous and detailed training could be given, for this would demand expert knowledge on the part of the teacher, and the supply of qualified teachers would fall far short of the demand;

unless, indeed, the work were done by visiting medical men or other suitable instructors attached for that purpose to the schools. Perhaps some vague and superficial knowledge could be obtained from the use of good textbooks, but very little it would be without the aid of skilled and competent teachers. Yet the subject is of such world-wide importance that it merits the careful consideration of all interested in education, and if something could be done to improve the general knowledge of the bearing of insect-life on humanity at large, the results might prove of inestimable value.

THE TEACHING OF RUSSIAN.

By Prof. NICOLAS ORLOFF, M.A.

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THE present is *par excellence* a time of difficulties; on all sides and in all possible ways they press themselves on distracted mankind, and demand an instant and thorough solution. In their numberless multitude, I cannot help discerning one almost as old as the Chinese civilisation, which has been for centuries but indifferently treated, and must therefore be now taken in hand, seeing that the—one may say—old racial enmity between England and Russia has happily undergone a decided change for the better, turned even into an alliance, which must be perpetuated from this time forth by all means in one's power.

I mean the old prejudice against the Russian language, said to be the most difficult one in the world excepting the Chinese. If this contention were admitted there would be no difficulty in accounting for the past estrangement between the two nations. Having devoted the greater part of my now forty-six years of life in England to the teaching of my native tongue, and having actually proved that the language can be learned in three months (one of my students could corroborate this statement), I am convinced that the reason of the prejudice still existing is to be found in the preference an average Englishman gives to Whitechapel instructors, who themselves have never tried to master the language, instead of a native if he happens to be connected with a Government school, and to the fact that it is only by teaching foreigners that an instructor can make himself thoroughly conversant with his subject, and discover principles which make the language as easily mastered as any other subject.

I now proceed to point out the principles discovered by me, in the perfect assurance that their adoption will make the learning of the

Russian language at least as easy as that of any other European tongue, thus entirely disposing of this seemingly permanent prejudice.

I can never forget a dispute which lasted at least half an hour, and arose through one of my would-be pupils objecting to begin to read a Russian newspaper because he had not yet learned the Russian alphabet. Russian, it is true, has more letters (thirty-six) than English, but they distinctly represent all possible separate sounds, and do away with the titful combinations of several letters.

Instead, then, of wasting almost a quarter of a book (see Riola's grammar) on the so-called rules of pronunciation, the pupil should be simply told to give to each letter its proper sound, but in doing so not to force nature; thus *o* unaccented would sound somewhat between *o* and *a*, whereas it would be a provincialism to pronounce it as if it were accented; so also it would be wrong to try to sound the letter *в* (*vo*) if it be followed by the letter *н*; *з* (*z*) before *т*, *ч* before *т*, etc. The only irregularities would then be in the case of the syllable *то* (pronounced as *vo*), but that exception should be mentioned only when the declension of adjectives is reached, since it is so pronounced only in the genitive case singular of that part of speech, and in the case of *е* accented, which is usually pronounced *yo*, the determining factors being the accent and the fact that the old Slavonic, which is still the language of the Church, does not know the sound.

The copula of Western tongues does not exist in Russian, since *есть*, *есть* (is, are) express existence of a thing; consequently a great many positive and interrogative sentences can be formed before any grammar has been learned. This becomes a priceless advantage for the beginner, who thus is enabled, in practising his alphabet, to learn words not singly (a treacherous way!), but in useful sentences occurring in everyday life. One Russian word equals three English: "*Хорошо* = It is good"; and as many interrogative sentences can be formed as there may be words in a positive phrase by the introduction of the particle *ли* after the *first* (in English last) *emphatic* word. "*Мой милый сынъ теперь здѣсь.*" (1) *Мой ли*, (2) *милый ли*, (3) *сынъ ли*, (4) *теперь ли*, (5) *здѣсь ли*? This peculiarity makes the language so extremely precise as to give the lie to the famous dictum: "Language is given us to conceal our thoughts." We shall see later in the case of verbs that a Russian, in his language, is certainly incapable of such results, be his cunning ever so great. In the same way and at the same time the—comparatively speaking—few roots of the Russian language may soon be mastered and at least a habit formed of

making derivations, thus practically assisting the pupil in a short time to become almost as much a master of one of the richest languages as the native himself.

Then, before the pupil comes to the grammar, he should first of all thoroughly master the following table of vowels and their correspondence:—

Hard а о у ъ
Soft я е ю ъ (і)

The great importance of this table will presently appear as showing that a whole half of the grammar need no longer be learned. At the same time the pupil should be made to know by heart, and never to forget, that the vowel *я* cannot possibly follow the gutturals and sibilants, and that consequently the vowel *и* (*i*) is used instead, and yet the declension remains hard. Should this *и* be followed by a vowel, it is spelt *і*, or shortened into *ѣ*.

Next arises the question of genders, which, by means of my table, is easily disposed of: If *а* be the termination of the feminine gender, *я* is also feminine; if *о* is neuter, *е* is also neuter. The adjectives in Russian being joined to nouns by a double stitch, the same table again lends a helping hand: *ая* being the feminine termination, *ое* neuter. Thus, as far as the declensions are concerned, only one kind—hard or soft—need be learned.

The pupil should further be told that in the singular number the neuter declension is exactly the same as the masculine, save that the accusative of the former is always like the nominative, and that the accusative (a case of direct dependence) of the masculine gender is like either the nominative or the genitive (Strike a stone with your foot and see whether any visible result would appear, and give a kick to a dog, which would at once turn round, viz., place himself in a position of relation); and that the prepositional (otherwise locative) is so called, inasmuch as it is *never* used *without* a preposition—an observation explaining the presence in manuals of the preposition *о* which is *mostly* used with the case.

The diagrams of declensions of both the nouns and adjectival parts should be simultaneously given for comparative study, which would at once reveal the fact that, with the sole exception of the nominative plural, there is no difference whatever between the genders or in the terminations, only *ы* and therefore *и* being the vowels in adjectives, and *а*, therefore *я*, in nouns; the genitive in nouns, however, being different from the prepositional, whereas in adjectives it terminates in *ых*, as in the latter case.

Thus the terminations of the three genders in nouns will be as follow:—

Masculine	Feminine	Neuter
ъ, ъ, ѣ In adjectival forms: ѣ preceded by ъ or і or о when accented	а, я, ъ ая or яя	о, е, мя (in the declension takes in a whole syllable ен) ое or ее

But if no one can point out any extraordinary difficulties in the declension, the conjugation is simplicity itself. There are in all four moods: infinitive, indicative, imperative, and conditional; but only three tenses: present, past, and future; the first and the last being the same in terminations, and the past showing the gender only in the singular, being the same for all genders in the plural. Былъ, была, было, были.

The present tense: говорю I am speaking.
The future: буду (писать &c.)

(е)ишь	ешь
(е)итъ	еть
(е)имъ	емъ
(е)ите	

у(ю), (а) я ть (а, я, у, ю) уть.

The conditional mood has only the past tense, which is distinguished from the indicative only by particle *бы*. Whilst in the indicative there appear to be two conjugations, distinguished by vowels *е* and *и*; in the imperative there is no such difference, the letter *и* being made use of in all verbs. The four participles: present, active and passive, and past ditto, are easily formed by means of suffixes, and so also are the two gerunds present and past. It must be particularly emphasised that Russian participles do not correspond to the English, and have to be rendered by "he who does" or "did"; it is the gerunds that have to be rendered by English participles. The only other matter that has to be mentioned in this connection is the rule of transmutation of the consonants: as *г*, *д* into *ж*, etc.

When one compares with this the most elaborate structure of a whole pile of tenses in the Western tongues one is surprised by what slender means the Russian compensates himself in this respect. This phenomenon is unique, found only in the Russian, and only for that reason not easily mastered; it is called the aspect of the verb. I was taught by Gretch (the most eminent of the older grammarians) that there are six such aspects; but his successors began to fight against this hydra, with, however, a varying, and not altogether brilliant, success; some say there are only four, some three, and some at last bring it down to as low a figure as two. No doubt a standpoint will not avail much when one is

supplied with two eyes only, of which one observes simply an action, and the other solely the result of that action; it is the relation of master and workman, paymaster and employee; the latter would be asked: Have you done your work? If so, get your money; the former caring for nothing else but the work done, and the latter never hoping for any cessation of work. There can therefore be only two aspects, and in compound verbs none other can possibly be discovered. But in the case of simple verbs one can distinguish potentiality and reality: *Хожу*, I am making use of my limbs; and *иду*, I am going. In the first case the question at once arises, when? whereas in the other the time is already defined. Thus we get a definite and indefinite aspect. Besides, one has to talk of repetition of an act and mention acts that can be done once only, which gives us two more aspects: iterative and semelfactive. Therefore Gretsch, in his time and from his point of view, was right when he spoke of six aspects. My teaching practice has made me construct a two-storey house, with only two rooms on the ground floor and four above, and arrange the letting thereof in such a way that down below only people encumbered with families or luggage could reside, and upstairs single persons, so that, in case they got married, they, as a matter of necessity, have to go down into the *corresponding* room below. My booking clerk I have provided with some clues so as mechanically to distinguish how the residents are to be arranged in case of removals. The unmistakable sign of the iterative aspect is the syllable *ив* or *ив*, and the comparative frequency of *ить* as the termination of the semelfactive.

The diagram may be made up as follows:—

Simple verbs	Indefinite aspect <i>ХОЖУ</i>	Definite aspect <i>ИДУ</i>
	Iterative aspect <i>ХАЖИВАТЬ</i>	Semelfactive aspect 2 legs are against, <i>брюшу</i>
Compound verbs	Imperfect aspect <i>Захожу, ухаживаю</i>	Perfect aspect <i>зриду, подбрюшу</i>

N.B.—The indefinite, definite, and imperfect aspects have all the three tenses, the future being formed by means of auxiliary verb *быть*; the iterative has only the past tense and the semelfactive and perfect only two tenses, viz., the future with the terminations of the present and the past tense.

Seeing that a Russian by his very forms of speech can only express either an act or the completion thereof, it would be impossible for him either to deceive or to conceal the truth.

Now the only matter that requires elucidation is the relation of the Russian to the Slavonic, which is still the language of the Church. In view of the latter's position, words appertaining to it are used in expressing abstract ideas, there being in Russian means for expressing those of everyday life, and they would also differ from Russian by having fewer vowels. Thus *глава* (head) would be used in the sense of a chief, whereas an actual head would be called *голова*, *гласъ* would mean a tone, and *голосъ* would stand for voice. It is the intense religiousness of the Russian that makes it impossible for him to talk of property, God being the *fons et origo* of everything. Thus, instead of saying *я имю* (I have), Russian makes use of the words *у меня есть* (near me there is), and has a rooted aversion to the former expression.

Until the present liberal rule, being politically deprived of every vestige of freedom, the Russian in his tongue seems to have been created for a freedom without bounds. Thus there are no hard rules for the arrangement of words in a sentence, the greatest liberty prevailing, but their very absence makes it still more obligatory for him not to abuse that liberty, just as a Christian is no longer bound by the Jewish law, and yet is expected to soar high above the decalogue.

No wonder that with the undeniable resources at his disposal a Russian never repeats the same word and yet expresses himself so precisely as to make a misunderstanding impossible.

That a manual, or rather explanatory reader, on the above lines may soon make its appearance is my ardent wish.

RURAL SECONDARY SCHOOLS AND THEIR DIFFICULTIES.

By WILLIAM ALDRIDGE, B.A., B.Sc.

Headmaster, Shepton Mallet Grammar School.

MORE than once lately the point has been raised that there is considerable difficulty in popularising "rural education." I am afraid this is only too true, and in this article I propose briefly to examine some of the causes in the light of my experience, now extending over nearly eighteen years.

First, let us try to get a clear idea of what the rural secondary school is called upon to do, and the conditions under which it has to work. Most often, the school is to be found in some small market town in the midst of a scattered ring of small villages, few of which are connected with the town by rail. The pupils are probably drawn from a district from eight to ten miles in radius. The majority

will be day pupils with a minority of weekly and full boarders possibly lodged in the Headmaster's house. Their homes are as varied as the district from which they come, and we find among them the sons and daughters (for the school will frequently be of the co-educational type, usually for financial reasons) of farmers, small landowners, professional men such as lawyers, doctors, clergymen, land agents, surveyors and the like, civil servants, engineers, business men and small shopkeepers, clerks, accountants and, since the advent of the Free Placer, even miners, mechanics and labourers. Many of these aspire to take up positions similar to those held by their fathers, so that the education provided by the school must be of the widest and most general description imaginable. No specialised education designed to produce merely farmers or gardeners will be of the slightest use. What then does "rural education" consist of?

The idea with which I started my experiment, which is that now being more and more widely adopted, was, that the education given in every school would be all the more interesting and effective if it were adapted in every possible way to the surroundings of the school and its pupils, so that the latter should not find the teaching of the classroom divorced from their everyday life outside, but, on the contrary, find their lessons of absorbing interest since they are constantly shedding light on the questions and difficulties with which they are confronted elsewhere. As the surroundings of the rural school will largely consist of the things of the countryside—fields, farms, gardens, hedgerows, woods, plants, animals, it is natural that the lessons of the school shall deal with these things and utilise them to the full for, what should be the aim and object of every school, the expansion of the minds, the intelligence, the characters of budding mankind—the making of the men and women of the next generation. And what a wealth of material is at the disposal of the teacher for the accomplishment of his purpose! The problems of the countryside are at once simple enough in some of their aspects to be grasped by the child-mind, and complex enough in their depths to call forth the best powers of the thinker and baffle the acutest brains.

Why does not every rural school hasten to take advantage of this rich fund of educational material lying under its very walls? The reasons which present themselves to me are very various. The first is financial. The rural school is most probably small, its expenses great but its income, contrariwise, small, for the authorities which dole

out the cash from the public purse have apparently all laid to heart the Biblical maxim, "To him that hath shall be given," and they religiously give capitation grants on a scale which is the same for large and small schools. Now a small school of fifty needs exactly the same staff as a school of 100, if it is to do equally good work, and consequently should have a greater total grant than the larger school since its other sources of income are much less. The short-sighted policy of starving the small schools results in the rural school being understaffed with ill-paid (hence possibly, though by no means necessarily, inferior) teachers. As the staff is overworked and underpaid there is no wonder that the teachers are not anxious to take up new ideas which inevitably demand greater thought, greater expenditure of energy, greater brain-fag.

But the training colleges and those responsible for our supply of teachers are also at fault, and the teachers themselves are not often prepared to make changes in their methods. The new idea breaks with educational traditions and demands originality of treatment. Too many teachers, I fear, enter the profession with the notion that teaching is a "soft job." They are content to go on in the old traditional ruts which their inherent inertia prevents them from leaving. To take up a new educational idea demands much strenuous labour on the part of the teacher. He must be prepared to give up many social pleasures and amusements. It is so easy for the teacher who follows the conventional plan to find text-books in dozens to relieve him of the necessity for thinking out his course, but the unconventional teacher must get away from text-books, make his own plan, make his own text-books to suit it, or modify those that exist to fit his course. This means abundance of work to occupy his time outside class hours. It is work of extraordinary fascination, but it is incompatible with the daily round of the links, or frequent evenings at bridge or billiards.

Then there is the bugbear of examinations. If these could be ignored or even reduced in number and variety the problem would be much simplified. But this is sighing for Utopia. Perhaps the Board of Education plan may afford us some relief in the dim and distant future, but the outlook is not particularly hopeful yet. Personally, I have found it possible to combine, with some success, the Junior Locals work with my Fourth Form course and the Senior Locals with my Fifth Form course, but I must admit that it somewhat hampers my work and spoils the logical completeness of it.

A more frequent cause of failure is to be found in the wrong ideas often and widely entertained of what is needed. It will not do to imagine that the course must be planned to train boys and girls exclusively for agricultural and horticultural pursuits. It is true that the course must inevitably deal most largely with the work of the farmer and the gardener, for these bulk largely in the school's surroundings, and also that the science course will form an admirable foundation for the successful practice of farming and gardening, but the object is quite different. It is to use these matters as the machinery for awakening first the interest, then those powers of observation and inference, of accuracy of thought and reasoning, of minute attention to details, of neatness and accuracy in keeping records, which are essential to the keen man of business so much in demand to-day. No mere course of school gardening, of bee-keeping, poultry-rearing or dairywork tacked on to the ordinary school course will satisfy the requirements; indeed, I venture to think that these are all more or less detrimental to the real object in view and of the nature of expensive, showy mistakes. Technical work, as such, should not be included in a purely educational course such as that which it is the function of the secondary school to provide.

Another fatal error into which some have fallen is the idea that "rural education" is a card to conjure with for advertising purposes with the hope of adding to their numbers. My experience shows that the reverse is the fact. The general public seem to think that such a school is a sort of technical school for the preliminary training of farmers only, with consequences the exact opposite to those hoped for. If a school adopts the "rural" idea I should recommend the master and governing body to say as little about its effects on farming as is convenient in the immediate neighbourhood of the school and let the public find out the advantages of the revised methods from the results obtained. I do not mean that the change of methods should never be mentioned, but that great care should be taken not to give a false impression of the meaning of the change. It has been said that tradesmen and others do not seem anxious to take advantage of schools with a "rural" basis. If they have other schemes for their sons' future than agriculture, and they are led to believe that the school course is intended somehow "to teach farming," this is not to be wondered at, but I do not find any such reluctance. On the other hand, having found the value of the school course in making their boys more fond of school, more alert and observant, they are anxious that they shall have the advantage of

the training. It is true that this training has incidentally led many of my pupils, sons of men who are in no way connected with agriculture, to become interested in farming and to take it up with success as their life's work, either in the homeland or in the more distant parts of the Empire. And this is all to the good; for they are able to combine science with practice and will form the nucleus of a more enlightened race of farmers.

But many other pupils, trained under the same system, have also made their mark in professional and commercial life as doctor, minister, schoolmaster, engineer, civil servant, bank, commercial or mercantile clerk, in businesses large and small, and in the hundred and one occupations which are recruited from the pupils of secondary schools in general. If I may be pardoned for seeming supremely egotistical, I should like to quote in illustration the following extract from a letter received the other day from the head of an engineering firm in one of our large towns. He says: "Dear Sir,—I have one of your old pupils with me, and from the way he has been educated by you it seems to me that your system of education produces the most excellent results in training for a practical business career. . . ." I think that this shows that if the "rural idea" is properly incorporated with the school curriculum no one will be driven from the school through its inclusion.

From the point of view of training farmers' sons to become more enlightened, more enterprising, and more scientific farmers, I am afraid I must admit that we are comparative failures, but this is not the fault of the school or of the system but of the farmers themselves. I speak only of the farmer of this neighbourhood, but my readers will know whether the description is typical of other districts or not. He is generally a man of moderate intelligence and of very imperfect education, hard-working, hard-headed and extremely shrewd at making good bargains for himself, prosperous, very adverse to adopting new ideas, profoundly distrustful of education, and with a supreme contempt for it. Sometimes he will bring his son to the school and say, "I want you to make him a good scholar so that he need not go on the farm, but if he don't get on I shall have to make a farmer of him." Or again, "I don't want you to trouble about teaching him anything besides reading, writing and figures, because he will have to be a farmer, so the other things won't be of any use to him." They will rarely allow their boys to stay at school much beyond their fourteenth birthday, even if they do not take them away before, and they frequently cause them to work on the farm before and after school on

school days, and to be absent for various reasons with painful frequency. A few of the more enlightened are anxious that their sons shall have the benefit of our course practically in its entirety, but it is going to take many years and much patient labour to bring home to farmers in general the fact that farming in the future will become more and more scientific and that the science underlying the practice is far more extensive, profound and complicated than that underlying any other business whatsoever, so that, instead of the embryo farmer needing only the bare rudiments of an education he really needs the most profound instruction in a great number of directions. At present, his haphazard, rule-of-thumb methods, the outcome of the accumulated experience of generations, combined with shrewd, business capacity enable him to make plenty of money (though he will rarely admit it), and this confirms him in his belief that education is a useless luxury. He also objects (and rightly so) to the scientific amateur with no experience attempting to teach him his business as a practical farmer—and this is a rock on which many would-be “rural” teachers come to grief. The idea that the schools are going “to teach farming” must be got rid of. It is a thousand pities it was ever dreamt of. The practical farmer has the technical details of successful practice at his finger ends, and it is the height of folly for a schoolmaster with no practical skill at all to make any claims to teach this side of his business. He must content himself with making use of the underlying science as an instrument for teaching and educating minds without worrying too much about the practical application to the problems of the farm itself. The good will follow in due course.

Lastly we must consider briefly the share of the “powers that be” in bringing about the alleged failure. When I commenced my experiment here it was under the auspices of the Somerset County Council alone, and I was given an absolutely free hand in planning my procedure. After a year or two the school found it necessary to obtain more money for the work and got it by having recourse to the Science and Art Departmental Examinations. The cash was of the greatest assistance, though the examinations tended to lead us into by-paths. When we came under the Board of Education the first attitude of the Board seemed somewhat hostile. Their inspectors appeared to be quite other than pleased to find a school working on lines with which they were unfamiliar, and I was told that what I was attempting to do was impossible. However, I was undismayed and proceeded to develop my scheme, partly assisted and partly

hindered by the rural science schemes somewhat grudgingly inserted in the Board's regulations for the few schools which were experimenting in this direction. But little by little the Board was converted, and recently it issued a very good memorandum on the “Curricula of Ruralised Secondary Schools” which should have considerable beneficial effect if teachers will not follow it too slavishly nor read into it what is not intended.

But one of the crying needs of rural (if not of all) education is a revision of the plan of appointing inspectors to guide and control the schools. So long as the Board continues to appoint as inspectors young men who have had no experience in teaching or in organising schoolwork in the classroom, merely because they have obtained a high place in the Classical, Mathematical or other Tripos at Cambridge, or what corresponds to it at Oxford, so long shall we have to lament that the education of this country is governed by fads which, like fashions, are continually changing. The theorist is always full of utopian schemes which are more or less impracticable, but teachers who fear the remarks in H.M.I.'s reports, and still more H.M.I.'s power over the purse strings, will try to adopt his schemes even against their better judgment. A man should be eligible for an inspectorship only after his judgment has been matured by age and by ripe experience gained by actual service for many years inside the school itself. Then the practical, experienced teacher would have confidence in accepting his advice knowing that he also had been through the mill.

A similar fault exists in connection with local education authorities, who, too frequently, seem to consider practical acquaintance with the schoolroom to be a bar to promotion to administrative control. So it comes to pass that too often our rulers look for something showy to the eye in return for the money they provide, forgetful of the fact that the best of any educational system lies hidden away in the minds and characters of the pupils who come under its influence and is not to be found in such things as a great array of school gardens, however attractive to the eye, or in endless collections of dried flowers however well arranged, or in reams of nature statistics, graphed though they be with inks of all the colours of the rainbow. All these and the like will be useless if the work of the school is not animated by the right guiding principles.

As the majority of the pupils attending a rural secondary school will have received their early training in the surrounding elementary schools, the question of the success or failure

of the secondary is intimately bound up with the work of the elementary school, and this appears to me to be unsatisfactory in just *the* one point where this nation is lacking when compared with the Germans; I mean in attention to details. Indeed, I almost go so far as to think that the failure of our people to realise the supreme importance of minute details is the direct consequence of the faulty training in this direction which is begun in our infant schools and carried on more or less through the whole of our educational system. This I trace to a fatal blunder made some five-and-twenty years ago and continued ever since. Thirty years ago, it may be remembered, excessive pains were taken that every child in an elementary school should be made to write exactly like his neighbour. This was attention to detail run mad. Then came the reaction. The inspectors of the Board started a new fad and propagated the idea that it was waste of time to teach young people the way to hold a pen, waste of time to teach writing formally, waste of time to teach spelling, waste of time to train minds through the medium of dissecting language by the aid of grammar, and so on, because they were being abused.

Consequently, all these things were dropped and an age of hurry and rush, slipshod work and inattention to details, was started. Each child, for example, holds its pen as it pleases, and so long as written work is moderately neat in appearance and rapidly produced it may be ghastly in the ugliness of its form and horribly careless in all its details. This reacts on everything the pupil does, and so the training of the school results in that attitude of the British workman which is the nightmare of business men. "Oh, that's near enough," says the workman, because he has not been trained from his earliest youth in the art of accuracy. The work of the rural secondary school suffers from the failure of the elementary school in this respect, and the pupil entering at twelve or thirteen with ingrained habits of careless indifference to accuracy of detail, in thought, in speech, and in act, is not in a position to reap full advantage from his all-too-short stay under the influence of the secondary school, even if that is of the best kind. Unfortunately, the inspectors of the Board do not recognise the failure, and all too often encourage its continuance or even actively check attempts to remedy it.

Let me conclude by giving actual examples of the result of this faulty school training on British trade which we fondly hope will capture that hitherto held by Germany in this land, captured from us by attention to details. A few months ago I found that my seltzogene

leaked at the valve and I sent the top of it away to be repaired. The firm reported that the valve had rusted away to such an extent that it could not be repaired and asked permission to send a new head, to which I consented, giving instructions that the tube, which was also broken, should be just 11 in. long. Now note the result. When the new head arrived I found the tube 11 $\frac{3}{4}$ in. long, and the head would not screw on because the workman had failed to note that the pitch of the screw on the head he selected was 1.7 mm., while on the old one it was 1.5 mm. The old head was returned to me, taken apart, so, as the new one was useless, I made an attempt to repair it myself, and in two hours I had succeeded in making it work satisfactorily. Again, I wanted some new pawls for a mowing machine and by measurement I found they must be at least 1 $\frac{3}{4}$ in. long to work satisfactorily. Consequently I ordered them of this length, but the man who made them evidently thought pawls from 1 $\frac{1}{2}$ to 1 $\frac{1}{4}$ in. were "near enough" and none of them would work the machine to my satisfaction, and I had to send for some more. Last week I wanted a picture frame with a special kind of back and I ordered it to be *without* a gilt slip. When it came it was sent with the ordinary kind of back and *with* a gilt slip.

Doubtless every reader can supply further illustrations of this chronic inattention to details from his own recent experience, but I fear few realise that one of the main roots of the cause of the failing goes back to the early school training, where slipshod work was virtually encouraged through the inexperience and lack of insight of those in authority.

THE TRAINING OF SEMI-SKILLED MUNITION WORKERS.

THE Ministry of Munitions has just issued a memorandum explaining a scheme for training munition workers in technical schools. This scheme has been formulated in co-operation with the Board of Education, the Scotch Education Department, and the Board of Trade Labour Exchanges, and contains many suggestions which are based on the experience of the last three or four months during which training classes have been held in various centres.

Special emphasis is given to the essential feature that the training to be given must be thoroughly practical. The aim of all such courses should be to impart to the learner the "machine sense," and to teach him to use a certain machine-tool on which he is likely to be employed in a factory. It is better to make a learner fairly trustworthy in simple turning

than to give him a mere nodding acquaintance with half-a-dozen different tools.

While no absolute uniformity in detail is insisted upon, the following should be noted among other regulations:—No male learner should be accepted who is of military age unless he is for some reason debarred from military service. Learners should be men or women of superior intelligence who are likely to learn quickly. Preference should be given to those willing to leave home and work in towns where there is a demand for labour. Each learner must give a written undertaking that he will work whole-time in a munition factory on the completion of his course. No fee should be charged. The Ministry of Munitions undertakes to bear the cost in accordance with particulars laid down. Certificates of proficiency are to be granted, and the utmost care must be exercised in this matter, as the whole scheme will fail if incompetent persons are placed in factories on the strength of their certificates. No course will be sanctioned which provides less than 30 or more than 100 hours' instruction.

The Ministry of Munitions suggests the formation of a small local training committee to assist the local education authority and the managers of the school or schools concerned, and mentions that this committee should normally include representatives of the authority or managers, the principal (or principals) of the technical school (or schools), the secretary to the local munitions committee, and the managers, or their representatives, of the Labour Exchanges. It may possibly be only an oversight, but we do not find any place in this committee, or in the whole scheme, for the heads of the engineering departments in the schools. The impression conveyed is that the scheme lies among workshop instructors, principals (who are not usually engineers), and outsiders. Speaking generally, the heads of the engineering departments in our technical schools and colleges have a wide knowledge of the engineering works in their districts, and are acquainted personally with the employers, managers, etc., in these works, and it seems peculiar that they should be ignored (on paper, at any rate) in any scheme for the training of learners who are expected to take places in these works.

The principals of technical schools and their instructors are advised to get personally into touch with munitions works, so that they may make themselves acquainted with their methods and be able to direct the tuition on the most suitable lines. The members of the training committee should leave nothing undone to ensure the placing of qualified students in munition factories, and special instructions

have been issued to the Labour Exchanges with a view of facilitating the placing of learners on the completion of the course.

There is no doubt that the technical schools will give the scheme whole-hearted support. Many of them during the past few months have gone far beyond the anticipations of administrative authorities, both in the way of training workers and in the production of munitions, and it is manifestly to the advantage of all that a fairly uniform scheme should be introduced.

It is not intended, or expected, that learners should possess high skill on completion of the course—all that can be accomplished is to render them less raw on entering the factories. It must also be kept in mind that not one-tenth part of the workers required could find accommodation for training in our technical schools. Many thousands have entered, and will enter, the factories with no previous training whatever, but it will lighten the task of supervisors to have even a few who have, as it were, been rough-turned before entrance. That the schools can produce the degree of training required is undoubted, and it appears that the whole success of the scheme depends on the attitude of employers towards the product. If we find, for example, that learners sent out from the schools with certificates of proficiency in plain turning or drilling are given jobs at feeding cartridge cases into machine hoppers, or similar work, which can be learned in fifteen minutes, the supply of learners entering the schools is not likely to be maintained, and enthusiasm will be damped both in instructors and students.

PERSONAL PARAGRAPHS.

BY the death of Capt. Wm. Loring, of the 2nd Scottish Horse, a remarkable figure is removed from the educational world, and a striking career brought to a comparatively early close. Born in 1865, the son of a Norfolk rector, he obtained his early education at Beccles Grammar School, whence he proceeded to Eton as a King's Scholar. In 1885 he entered King's College, Cambridge, with the Newcastle Scholarship. At Cambridge he gained other scholarships, took a first class in both parts of the Classical Tripos, and won the Chancellor's medal. In 1889, as Craven student, he joined the British School at Athens, where for four years he worked at archæology. He was then appointed an examiner in the Education Department, and was private secretary to Sir J. Gorst and afterwards to Sir Wm. Anson. When the South African war broke out he threw up his post, and enlisted in the Imperial Yeomanry. He took part in

numerous engagements, was mentioned repeatedly in despatches, was awarded the D.C.M. and given a commission in the Scottish Horse, and in 1901 was wounded at Moedwill. On his return home he was appointed Director of Education in the West Riding, and afterwards, in 1905, Warden of Goldsmiths' College in the University of London. Whilst occupying that position he rendered important collateral assistance to the University in connection with the Military Education Committee, the Appointments Board, and the Boards of Studies in archæology and in pedagogy. His year of office as president of the Training College Association was, through his efforts, one of the most important in the history of that association. But his work at Goldsmiths' College was his central and absorbing interest during the last ten years of his life. There, as we have good reason to know, his death is lamented deeply and felt severely by staff and students alike, for he had won universal admiration and respect by his strenuous devotion to duty, his unfailing courtesy and kindness, and his consistent faithfulness to lofty ideals. A very impressive memorial service was held at a church adjoining the college on the afternoon of November 13th, and in the evening the Acting Warden, Mr. T. Raymont, addressed a large concourse of old students of Goldsmiths' on the extraordinary career of their lamented principal.

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CAPTAIN E. G. LANGDALE, 1/5th Leicestershire Regiment, was killed in action in France on October 13th. He was educated at Eastbourne College and Merton College, Oxford, where he graduated with honours. At the outbreak of the war he was a master of Oakham School; he had had considerable experience as an officer in the O.T.C. He was formerly a master at King Edward VII. School, Sheffield, and went to Oakham in 1912. In August, 1914, Mr. Langdale received a commission in the 5th Leicestershire Regiment, and went to France in February of this year. He was slightly wounded in September last and was gazetted Captain a little later.

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LIEUT. W. A. PIERCY, 17th (County of London) Battalion, London Regiment (Poplar and Stepney Rifles), was reported killed in action in France on September 28th. Mr. Piercy received a commission in the early days of the war and was promoted in December last. He was educated at Kingswood School, Bath, the City of London School, and the Borough Road Training College. For six years he was a master at Cann Hall Lane School, Wanstead, for a year at Huntingdon Grammar

School, and for two years at Judd's Commercial School, before going to the Whitechapel Foundation School in 1911 as French master.

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2ND LIEUT. F. J. STEELE, 8th Royal Berkshire Regiment, was killed in France on October 13th. Mr. Steele was educated at the Grammar School, Carlisle, and St. Mark's College, Chelsea. He was for several years a master at the Shepton Mallet Grammar School and at Hampton Grammar School. When the war broke out he enlisted in the Sportsmen's Battalion, and after nine months received a commission in the 3rd Dorset Regiment, being subsequently transferred to the 8th Royal Fusiliers.

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CAPT. M. J. A. FOLEY, 10th Battalion Middlesex Regiment, has been killed in action at the Dardanelles. He graduated at Emmanuel College, Cambridge, in 1903. Mr. Foley had been a master at Camberwell Grammar School for three years and was a Lieutenant in the School contingent of the O.T.C. For several years he was a member of the Incorporated Association of Assistant-masters, and was an energetic member of the Education Sub-Committee, of which he was for a time the secretary.

* * *

THE Incorporated Association of Assistant-masters is temporarily losing the services of Mr. F. R. G. Duckworth and Mr. G. H. Heath. Mr. Duckworth, who became honorary secretary at the beginning of the year, has been granted a commission in the Royal Field Artillery. Mr. Heath has served the Association in many capacities. For some years he was treasurer and has recently been honorary secretary for a long term of years; as such he has represented the Association with marked ability on many occasions. The Committee of the Association will be considerably weakened by the loss of his clear, sound judgment, his fearless expression, and his undisguised hatred of anything approaching sham. He is giving up his work in the Association in order to devote all his spare time to munition work.

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MR. DUCKWORTH'S position as honorary secretary will be filled by Mr. H. P. Lunn. Mr. Lunn is well known to those engaged in the work of the Association as one of its hardest workers. He has done immense service to the Association on the Legal Sub-Committee and in connection with pensions for teachers. Mr. Lunn was also one of the founders of the Insurance Society.

THE Rev. Stuart A. Donaldson, master of Magdalene College, Cambridge, died at his official residence on October 29th. Dr. Donaldson was educated at Eton and at Trinity College, Cambridge, of which he was a scholar. He was 12th Classic in 1877 when the Rev. J. E. C. Welldon was Senior Classic and first medallist. He was shortly afterwards appointed to a mastership at Eton and became a house-master. His high character and lofty aims had their effect in his relation with the boys, and it is as a house-master that he will be remembered at Eton. His devotion to this work told upon him so much that in 1900 there were signs that a breakdown was to be feared. In 1904 he obtained the mastership of Magdalene, which at that time needed a head who would attract Etonians and those schoolmen who were devoted to sport and keen on work.

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DR. DONALDSON is to be succeeded by Mr. A. C. Benson, the eldest son of the late Archbishop Benson. Mr. Benson was educated at Eton and at King's College, Cambridge. He became a master at Eton in 1884, an office that he held until 1903. He is a governor of Gresham's School, Holt, Perse School, Cambridge, and Soham Grammar School. Mr. Benson is now widely known as an essayist, and among schoolmasters as a supporter of the modern against the old classical curriculum.

* * *

THE Rev. W. H. Keeling, headmaster of Bradford Grammar School since 1871, is resigning on account of advanced years and failing health. Mr. Keeling went from Manchester Grammar School as medallist and leaving exhibitioner to Wadham College, Oxford. After two years as a master at Bromsgrove School and two years at Rossall, he became headmaster of Northampton Grammar School, a position he held for four years before going to Bradford in 1871.

ONLOOKER.

ATLAS, TEXTUAL AND WALL MAPS FOR SCHOOL AND UNIVERSITY USE.

A COMMITTEE of the British Association has been considering during the past two years the contents and arrangements of the maps suited to various school purposes. This committee first presented an interim report, much of which is reproduced with modifications in Part I. quoted below; the final report being made this year at Manchester. The interim report was utilised to elicit many expressions of opinions from teachers, and the members of the committee have been able to meet geographers and

teachers informally, and, in consequence, the final report may be taken to represent a studied summary of an intricate and difficult subject.

The report, probably, represents a compromise between many diverse views, and it sacrifices, to some degree, liberty and variety of utility to the desire to present a definite and precise scheme. For example, the reader will note the opinions that the world should be presented to school pupils only in the hemisphere map and that the Mollweide projection should not be used. A world map is a conventional diagram, and the pupil should frequently use a globe; hence there is much to be said for the opposite view to that of the report, viz., cause the pupil to use as many varieties of world maps as possible, always in relation to the globe.

The report should be consulted by all who are interested in the question of the lettering to be used upon maps, as that section has been omitted from the following quotation since it necessitates reference to two large specimen maps which accompany the report. A paragraph suggesting the use of meridians and parallels as the boundaries of maps has also been omitted.

The practical teacher will gain much assistance from this report, especially in the matter of selecting the atlases and maps for his pupils, and it is to be hoped that the map publishers will embody the suggestions in their work. Teachers who are able to obtain copies of the report should file it for reference when the next flood of atlases, etc., is let loose upon the market.

PART I.

Contents and Arrangement of a School Atlas.—While not desiring in any way to stereotype the contents of a school atlas, the committee submits its syllabus of maps as a concrete example of what may fairly be included in such a publication.

The needs of junior and senior students differ widely, and it was found necessary from the outset to deal with them separately. But throughout the inquiry it has been the object of the committee to provide as far as possible for a senior and junior atlas which should be consistent in their general plan and execution.

Senior School Atlas.—"Royal" paper (25×20 in.) will give a map 10½×8½ in. on the single page. Double-page maps would, of course, be best mounted on guards; but this arrangement is too costly for a school atlas, and the practical difficulty is best overcome by printing such maps as two single pages *with an overlap*, and binding them as usual. It is essential that all the maps should be readily comparable. In particular, all world maps should be on the same projection. As few scales should be employed as possible. All the continents should be shown on the same scale; unless, as below, a double scale is used for Europe. For larger-scale maps simple multiples of this scale are

recommended, as will be seen from a comparison of the lists which follow.

In maps of climate the annual distributions are less useful for teaching than the seasonal, and it would be a great gain if the summer and winter conditions were represented on maps of the north and south hemispheres. It will be noted in the appended list that the double-page maps of the continents each allows for two insets; for India three seasons should be represented. Maps representing the distribution of population have high value; geological and vegetation maps should be included if possible, but are not essential. Historical and economic maps belong to special atlases or to text-books, and should be excluded from the school atlas. It would be enough to indicate the busier regions, industrial and agricultural, if these do not emerge sufficiently clearly from the population map.

List of Maps.—*World Maps.*—(1) Maps of a selected region, to exhibit scales, methods of showing relief, etc.

(2) Hemispheres, heights, depths: section along 45° N.

(3) Hemispheres, political: inset River Basins.

(4) Hemispheres, population, density: Races inset.

(5) Polar Regions: Land and Sea Hemispheres.

(6) Vegetation: Ocean Currents.

(7) Commercial Highways and Development.

(8) Temperature: January, July, Annual Range.

(9) Pressure and Winds, two or four months. Rainfall: seasonal.

Europe.—(10) Europe (20 millions), physical. Inset (40 millions); temperature: January, July.

(11) Europe (20 millions), political. Inset (40 millions); rainfall, seasonal.

(12) (a) Population, density; languages. (b) Minerals and manufacturing regions.

(13) Mediterranean (10 millions).

(14) Central Europe (5 millions).

(15) Italy and Balkans (5 millions).

(16) Alps.

(17) (a) N.W. Europe (10 millions). (b) Spain (5 millions).

(18) (a) France (5 millions). (b) British Isles (5 millions).

(19) Large-scale maps; e.g., position of Vienna.

America.—(20) (a) North America (40 millions),

physical. Inset (80 millions); temperature: January, July. (b) North America (40 millions), political. Inset (80 millions); rainfall, seasonal.

(21) (a) U.S.A. (20 millions). (b) Atlantic Coast (10 millions).

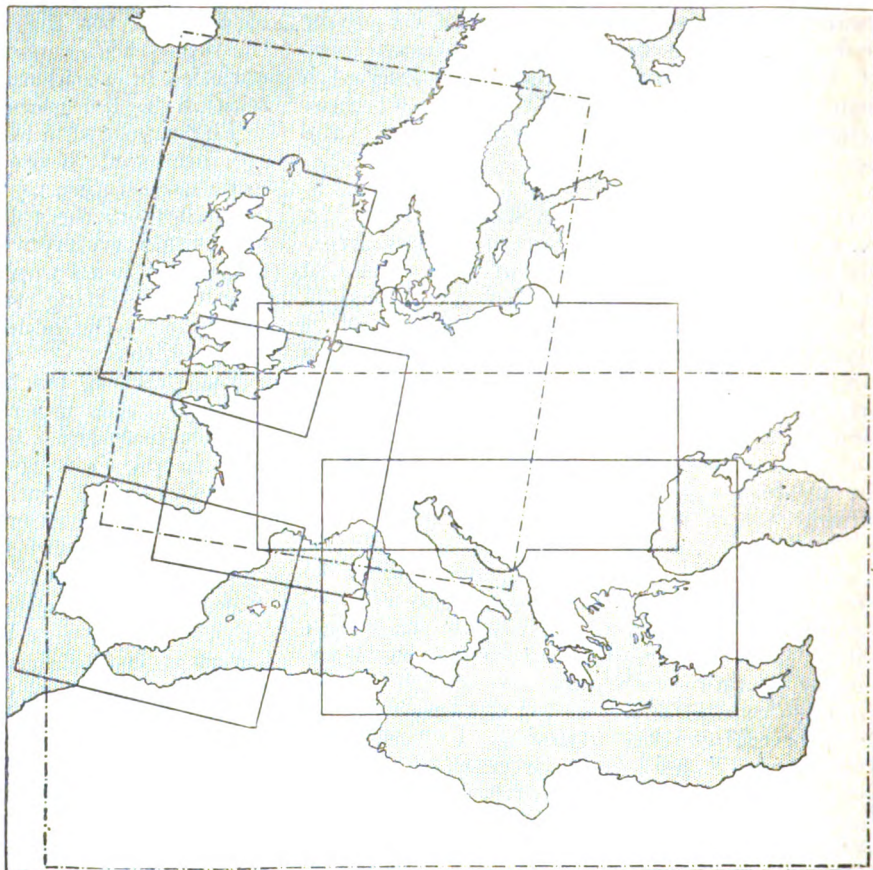
(22) Canada (20 millions), and Special Areas.

(23) South America (40 millions), political. South America (40 millions), physical.

Asia.—(24) Asia (40 millions), physical. Inset (80 millions); temperature: January, July.

(25) Asia (40 millions), political. Inset (80 millions); rainfall, seasonal.

(26) Southern Asia (20 millions).



MAP 1A.—The European areas to be shown are enclosed by broken lines (Maps 13 and 17A) and continuous lines (Maps 14, 15, 17B, and 18).

(27) China and Japan (20 millions); Palestine.

(28) India, political (large scale); climate.

Australasia.—(29) (a) Oceania, including East Indies (40 millions), political. (b) Australia (20 millions), physical.

(30) (a) East Australia. (b) New Zealand, larger scale.

Africa.—(31) Africa, physical (40 millions). Political (40 millions).

(32) South Africa (20 or 12 millions). Insets, West Africa, Egypt, temperature, rainfall.

British Isles.—England and Wales, Scotland and Ireland, physical and political (2 millions).

Special regions, A, B, C, D, E, 1: 500,000.

Special regions, *a, b, c*, 1:200,000.

It appears from our inquiries that there is a real demand for large-scale maps of special regions in the British Isles, which could best be met by special editions for different populous areas.

Junior School Atlas.—In a junior school atlas for each continent one map (physical, with political boundaries shown in red) would meet all needs. Maps 4

tion with reference to an atlas for university use, feeling that a university student should have access to and familiarity with a wider variety of maps than could be included in one volume.

PART II.

Style and Draughtsmanship.—The chief criticisms of existing school atlases are directed against excess

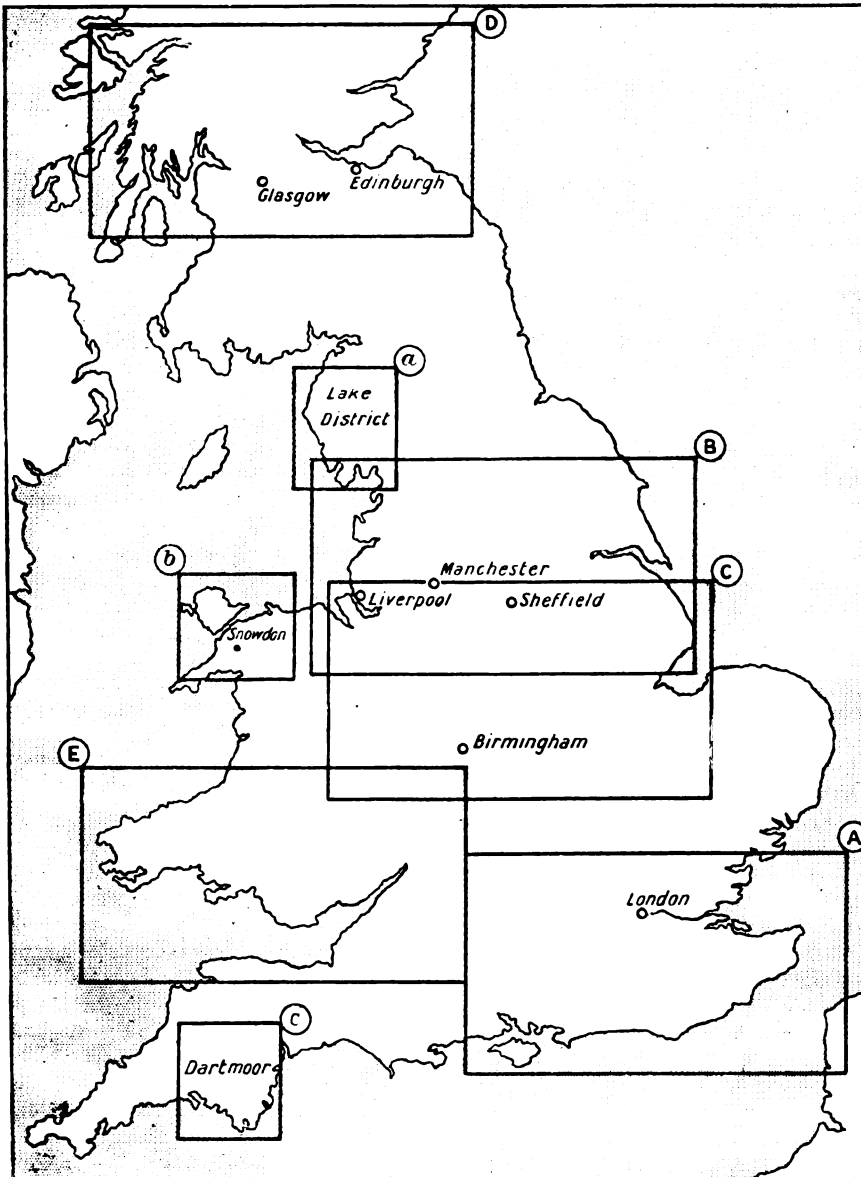
of names, impurity of colour, and indistinctness of lettering.

Most atlases still err on the side of excess of names, though in some quarters there has been great improvement of late. The atlas should be provided with a place index, giving latitude and longitude of important sites not named on the plates. This would enable the student to add the names which he requires for his own purposes, on a blank outline. The use of such blank outline maps has increased greatly in recent years, and it is desirable that a school atlas should be so published that its maps may be obtained also singly, both fully coloured and also in outline.

Where both orographical and political maps of one region are provided, no names but those of physical features should appear on the orographical map. The maps should have as little as possible in common beyond the outline, rivers, and railways.

Colour.—The "layer-system" is almost universally used for the expression of relief in school atlases. Intermediate heights may be shown by conventional hachuring. Contours on such maps can give but little idea of form, and are not recommended except when re-

quired in printing, as to bound the colour bands. In nearly all the atlases examined the colours were found to be too deep. The committee confidently recommends that the colour-scheme adopted for the international map, 1:1,000,000, and based on the teaching of physiological optics, be followed as closely as possible for all physical maps.



MAP 1B.—A, B, C, D, E are areas, some of which might be shown by double-page maps on a large scale (e.g., 1:500,000); *a, b, c*, single-page maps of holiday areas on a still larger scale (say 1:200,000).

and 5 would be combined; also 8 and 9 (temperature and rainfall only). For 26 and 27, India, China, and Japan (20 millions) might be substituted, and the following maps omitted, viz., 12, 15, 16, 17, 19, 21B, 22, 29A, together with 18A if France were shown on Map 14.

The committee is unable to make any recommenda-

For the sea, deepening shade of blue should be used, not white, the depths being indicated in feet rather than in fathoms; for lakes, the same blue as for the shallowest sea. Rivers and river names should be in blue. Red lines which stand out well from the background can be used to show political frontiers on an orographical map. Colour indicating relief should not be interrupted at the frontiers but carried to the margin of the map.

Gloss.—It is important that no glossy inks or super-calendered paper should be used for a school atlas. The reflections from a glossy surface are apt to injure eyesight, partly by interfering with binocular vision.

Projections.—Few varieties of projection should be employed in a school atlas. For hemispheres, Clark's minimum error projection is best; the globular projection is to be avoided. For continents and for the larger countries, zenithal equal area; for the smaller countries a simple conical development. The excessive distortion of Mollweide's homolographic projection makes it unsuitable for school use. From the body of the atlas, Mercator's projection should be excluded; it can, however, be effectively employed as an index sheet. It is an excellent lesson in distortion to plot carefully on a Mercator's projection the areas covered by the individual maps of the atlas. We consider that hemisphere maps should be much more freely employed, since they are the most accurate representations (except the globe) of the earth's surface. Where practicable, they should be used to exhibit world distributions of all kinds. On each map the scale should be clearly stated. In the margin should be indicated other towns in the same latitude and also (on maps of wide extent) the area of a quadrilateral of the network.

Conventional Signs.—In general, conventional signs should not be multiplied or created *ad hoc*. The few recognised signs are sufficient, unless to indicate any new feature, such as a first-class wireless telegraphy station, or the employment of river water for power or irrigation. The limit of navigation on a river may well be shown by an anchor. The solid black dot for town sites has advantages over the fine open circle, as better revealing concentration of urban population. Larger towns require a larger dot or a dot within a circle. Railways and canals should be shown by single lines of a distinctive character; a fine single black line should be avoided. On large-scale maps a symbol is required for roads also, since motor traffic has restored their significance.

Words or conventional signs indicating the distribution of economic production are strongly deprecated. If economic factors must be exhibited on a general map, solid colour or shading should be used to show the concentration of industrial population, or the locality of high production of two or three commodities of first importance.

Textual Maps.—Black and white maps in school books should not attempt to supersede atlas maps, but should be confined to their function of illustrating statements in the text. Mechanical shading is often either too coarse or too light. The use of large areas of solid black should be cautiously exercised. White

letters on a black ground, and black letters on a shaded area, too often tend to print obscurely. The size of type, if intended to be read, should be as carefully considered as in the atlas, and additional allowance should be made for imperfection in reproduction. Over-reduction in the camera from the original drawing is one of the commonest faults in block-maps, and owing to limitations imposed by the size of the page, the fault lies usually in the drawing. In general a textual map must be simple and not attempt to show high detail, and features tending to mutual obscuration should not be shown on the same map. Thus the same phenomenon for different seasons or associated phenomena (e.g., isotherms for January and July, or isotherms and isohyets) should not be shown on the same map—the particular examples cited apply equally to coloured maps. But this rule is not rigid. It is sometimes difficult to compare the phenomena shown on two maps (e.g., the climatic and the form divisions of a large country) when the two might have been exhibited on the same map without obscurity.

Wall Maps.—The recommendations of the committee in regard to the style of a school atlas apply almost without modification to wall maps. The scales employed should be as few as possible, and should be simple multiples of each other. This is more easily arranged in a set of wall maps than in an atlas, because there is here no necessity that the maps should be of uniform size, or that the amount of margin should be uniform throughout the series. For the same reason, it is far less necessary that the map area should be foursquare, especially in maps of continents and oceans, where every effort should be made to emphasise the fact that the objects represented lie upon a spheroidal surface. Awkward blank areas in the margin, which would be distressing in an atlas-page, are invaluable for supplementary letterpress in a wall map; though they should never be so far filled up as to prevent the map itself from standing out boldly on the sheet.

The far larger scale of a wall map is no excuse for the introduction of minute detail or a crowd of names. A wall map is essentially a diagram. The use of wall maps without names, or with only a few names or initials appended to town-dots or the mouths of rivers, is greatly to be encouraged. Some French wall maps are printed in duplicate, back to back, with the names on one side, and the physical features and town-dots, unnamed, on the other.

Even more than in the atlas, colour shows relief better than contours. Inclined illumination from the north-west gives, in skilful hands, an almost pictorial effect. The colours of a wall map should not, however, be too bright or deep, with the single exception of the scarlet which is appropriately used for all kinds of arbitrary lines.

Wall maps are often too elaborate and costly. The paper must, however, be good enough to stand occasional cleaning with breadcrumb or soft india-rubber. The use of inferior paper has led to the current practice of varnishing the surface. Varnish has fatal effects upon a map. The reflected light from the surface makes the map useless to a large class in a well-lighted

room and actually diminishes the amount of light from the printed and coloured surface below. There are very few kinds of varnish in use which do not turn brown or yellow with age.

It should always be remembered that the wall map is intended to supplement, but not to replace, the atlas. Most wall maps fail by attempting too much.

THE SCHOOL MEDICAL SERVICE.

THE annual Report for 1914 of the Chief Medical Officer of the Board of Education¹ gives gratifying evidence of the success attending the Board's organised effort to secure the health and physical efficiency of school children. The paramount importance of constructive work of this kind, with its far-reaching effects upon mental capacity and moral character, has long been obvious to educationists; it is now being brought home forcibly to all by the circumstances of the war. The School Medical Service provides an organisation throughout the country, not only for the detection and remedy of defects and disease in children of school age, but also for bringing educational influence to bear on the problems of child welfare, and so preventing to a large extent the occurrence of similar evils in the future.

The service, under the local education authorities, is now handling 1,900,000 children per annum, of whom 375,000 are actually receiving remedial treatment. As Sir George Newman, the Chief Medical Officer, points out, the first essentials in regard to ameliorative measures are personal cleanliness and the proper nutrition of the body. The Report gives clear statistical evidence that the standard of cleanliness in public elementary schools is steadily rising, largely as a result of the work of the school nurses. On the other hand, something like 10 per cent. of the total number of children in attendance at public elementary schools are suffering from malnutrition. The chief causes of this seem to be (1) unsuitability of food, (2) the presence of enlarged tonsils, adenoids and tuberculosis, (3) insufficiency of sleep. While malnutrition is thus not synonymous with under-feeding, "the improvement in nutrition directly due to meals provided by the education authority has been very noticeable." Tables giving particulars, amongst others, of the number of children fed and the expenditure incurred in the various areas show the large extent to which advantage is taken of the Provision of Meals Acts. Treatment by the school medical service is mainly confined to defective vision, enlarged tonsils and adenoids, and diseases of the teeth, eyes, ears, and skin.

The activities of the service in these respects are described in considerable detail, with statistical tables. Special sections of the report deal with physical training, open-air education, and the employment of children.

The need for preventive measures is shown by the fact that in spite of a remarkable decline in infant mortality in recent years, 92,166 children under one year of age died last year in England and Wales. The significant comment of the Chief Medical Officer is that the principal operating influence in the production of infant mortality is the ignorance of the mother, and the remedy is the education of the mother. The Board of Education have recognised responsibility in this respect by official encouragement and financial support of schools for mothers, infant consultations, home visiting, day nurseries, and the like, as well as by establishing definite school instruction in the laws of health and by the practical teaching of mothercraft to girls. The descriptions given of the work done in these fields are particularly encouraging. It is satisfactory to be told that provision for this kind of instruction is rapidly increasing.

A pleasing feature of the report is the cordial acknowledgment of the ready and effective co-operation of teachers and other voluntary workers in the various activities of the school medical service.

A number of extracts from the Report are given below:—

If we are rightly to equip the children of the nation, it is necessary to give to them all, whether normal or defective, whether rich or poor, a sound and liberal education of body and mind. It does not seem too much to aim at that every child shall be clean, well-nourished, and, as far as possible, healthy; that its systematic physical training shall be taken in hand thoroughly and efficiently; and that its future employment shall be properly foreseen, safeguarded, and prepared for. The whole problem of the health, equipment, and subsequent training of the "leaving" child demands further attention in each area, and is essential to the well-being of the State. Given a healthy body, the development of both muscle and brain is dependent in large measure upon nurture and physical education in its widest sense. On such a broad foundation, the mental and spiritual growth of the child and its upbringing in effective citizenship will be secure.

For a number of years the Board of Education have advocated the teaching of "Mothercraft" to the elder girls in public elementary schools.² Girls of twelve to fourteen years, and even younger, are often called upon in their own homes to take charge of their little brothers and sisters, and most of them thus become familiar in a practical way with various details of infant management. In spite of their youth, it has

¹ Wyman and Sons viii + 309 pp. 1s. 3d.

² See Memorandum on Teaching of Infant Care and Management in Public Elementary Schools. (Circular 758). Annual Report, 1910. pp. 277-30.

been found that they take an eager and intelligent interest in all that concerns the upbringing of the healthy baby, and systematic lessons in "Mothercraft" are always popular. Such teaching is not intended to provide an extensive or exhaustive knowledge of infant welfare. All it can do is to train the girls in details of the ordinary nursery care of the baby. Methods of washing, dressing, and clothing a child are matters which are certainly not beyond their intelligence, and practice in these details can do no harm and may lay the foundations for a wise and careful treatment of their own children in later years.

The poorer and more neglected children frequently have the cleanest and soundest teeth. Children in poor schools have better teeth than those in better class schools; this occurs especially in infants' departments. Poor children retain their temporary teeth in good condition for a longer period than do those more happily situated. It seems probable that the reason for this is to be found in the domestic arrangements of the poorer classes, and the fact that the children are left to pursue their natural aptitude for chewing uncooked fruit and vegetables. Further and more definite investigations on this matter are needed; the results of careful inquiries into the habits, diet, and domestic circumstances of children whose dentures are unusually well preserved would probably be of considerable value in the formulation of preventive measures.

The encouraging results obtained from open-air day schools make the wide extension of this type of education most desirable. The experimental stage has now been passed, and although various modifications of the present routine will no doubt suggest themselves later, the generally accepted form of the curriculum now in use seems to meet the requirements fairly satisfactorily. The additional cost of staffing and maintaining a school of this kind is largely met by increased grants in aid, and there is no reason why the expenditure on buildings should be high if authorities are prepared to make use of simple and cheap accommodation. Elaborate buildings do not make the treatment more effective, and they have few advantages in cold weather other than the fact that the rooms can be closed and heated, when, indeed, they become little more than well-ventilated ordinary classrooms. Much can be done during a great part of the year, at any rate, with wooden buildings open on, say, the south side, and having large windows on the north and other aspects. If the open sides are provided with doors (preferably on the stable-door pattern), which can be fully opened or partially closed as need arises, much better protection from rain and wind is obtained, and the cost is not greatly increased. The Board are willing to consider any scheme for the utilisation of cheap temporary buildings as open-air classrooms or schools, provided that the rooms are, in fact, of an open-air type, that the equipment is adequate, and that proper arrangements can be made for feeding the children and keeping them warm and dry. In view of the twofold need for economy in expenditure on school buildings and for securing favourable conditions of education for a large number of delicate

and debilitated children, it is hoped that local education authorities will consider seriously the possibility of adding to their available school accommodation by means of temporary open-air buildings.

It is clear that both the necessities and opportunities of the time indicate the great need for consideration as to the future development of a national system of physical training in schools, training colleges, and elsewhere. The school is not the place to develop any highly specialised form of physical training, and should be regarded rather as the occasion when the best general preparation can be made for a specialised training in later years, if this is eventually desired. Physical education should take its place as part of the normal curriculum, and should be carried out without undue emphasis but without neglect. It should serve as the natural link between the more strictly mental subjects and the recreative activities of the school. But it should be much more than that. It should be so broad and varied in its form and application as to provide the opportunity for individual character-training in control of the body, in handicraft, and in discipline. It is the foundation upon which much is to be built. Only by the proper and full use of a progressive, systematic, and universally applicable scheme of physical training can the physique of the children and young people of the whole nation be rightly and effectively developed.

A few figures will indicate the extent of the work done [in the provision of meals] during the year ending March 31st, 1915. The Provision of Meals Acts were put into operation, and claims for grant under the Provision of Meals Regulations were made by 136 authorities, as opposed to 97 in 1914-15. The number of individual children who received meals was 421,975, and the number of meals provided was 29,596,018, *i.e.*, 6,443,162 breakfasts, 21,636,280 dinners, and 1,516,576 other meals.³

The total net expenditure on meals of the 136 authorities in 1914-15 was about £300,000, which shows a considerable rise compared with £142,857 in the previous year. The average total cost per meal supplied to the children in 1914-15 was 2.47d., as compared with 2.43d. in 1913-14.

It will be admitted that the social evils and difficulties of which malnutrition is one of the results are deep-seated and widespread, and they cannot be cured either wholly or immediately by the direct action of local education authorities, though these authorities can do much if they make the fullest use of the considerable powers they now possess. They are not doing this by the mere provision of meals for hungry children, however excellent the actual organisation of their meals may be. Such organisation must be regarded as but one part of the authority's whole activities for the benefit of the children, and must be viewed in its true relation to the whole. It is idle to expect true reforms in the national physique from this one method alone. So far as it directly affects the chil-

³ In the previous year, 156,531 children received meals during term time, and 15,879 during holidays; while the total number of meals provided was 14,525,593, *i.e.*, 2,209,382 breakfasts, 11,230,604 dinners, and 1,085,513 other meals. 1,594 meals were not classified.

dren, it must be linked up with the school medical service, the general training of the public elementary school, the special training of the technical school, and the possibilities of the Juvenile Employment Act. So far as the parents are concerned, other activities must be given full scope—schools for mothers, day nurseries, cookery classes, visits to the homes by school nurses and health visitors, the distribution of pamphlets on dietaries and food values, and all voluntary effort and agency having for its object the increase of the sense of responsibility and the formation of a generation of parents who possess both the knowledge and the desire to make their homes suitable training grounds for children of good nutrition and sound physique.

THE RELEASE OF MASTERS IN SECONDARY SCHOOLS FOR MILITARY SERVICE.¹

1. SINCE the issue of His Majesty's appeal to the country the Board of Education have been approached by a number of representatives of local education authorities and of the governing bodies and staffs of secondary schools. As the Board confidently anticipated would be the case, they learn that there is a general desire on the part of masters in secondary schools who are of military age and physically fit, to offer themselves for military service, and on the part of education authorities and governing bodies to release them for this purpose. At the same time, it has been indicated that some general suggestions and advice from the Board as to the procedure to be adopted would be welcomed.

2. In the interests both of the recruiting system and of the schools, it is desirable that the number of masters in secondary schools who are prepared to undertake military service and are medically fit for it should be ascertained as soon as possible.

For this purpose it is hoped that masters who are willing to serve will at once intimate formally (through their headmaster if they are assistant-masters) to their governing bodies or local education authorities their desire to join the forces and to take up actual service in their age-groups when they are wanted, or as soon as the schools can spare them. It is also desirable that such masters should as soon as possible submit themselves for medical examination by an army doctor in order that they and the school authorities may know definitely whether they are fit or unfit.

The adoption of this procedure will assist the school authorities in making the necessary adjustments and arrangements for the provision of substitutes before members of their staffs are actually called up for service.

3. It is desirable that school authorities should endeavour as soon as possible to frame a plan for releasing masters for actual service at future dates. This of course will depend on the circumstances of each school, the possibilities of obtaining substitutes (women or men ineligible for military service), etc. In some cases the process of release might be facilitated

by concerted arrangements between different schools: e.g., it is possible that a school staffed largely with men of over military age or physically unfit might be prepared to lend staff temporarily or permanently to another school whose work would otherwise be totally disorganised by the early release of all eligible members of the staff.

4. The Board are authorised by Lord Derby to say that, while he is anxious that masters who are willing and fit to serve should be attested as soon as possible, he deprecates precipitate action which would unnecessarily dislocate and impair the work of the schools, especially in the upper forms, where the boys are approaching military age. It is already well known that the War Office desire that masters in secondary schools who are engaged in the work of training contingents of the O.T.C. should not undertake military service, unless or until provision can be made for continuing that work effectively. In other cases, where the sudden withdrawal of the headmaster or of masters whose functions in the school are specially important, or the simultaneous withdrawal of a large number of masters would seriously disorganise the work of the schools, Lord Derby considers that full advantage should be taken of the system of gradual embodiment by age-groups and of the machinery for appeals which will be set up in the immediate future.

5. The Board understand that, under the machinery of local recruiting appeal committees, provision will be made by which, on the one hand, men who have been attested can ask for special consideration of their individual circumstances and employers can ask for special consideration, on national grounds, of the requirements of the work in which the men are now engaged. It is understood that, under the second of these provisions, local education authorities and governing bodies of schools may, with the concurrence of the individual men concerned and as their employers, appear before the committees and state their case in favour of postponing the embodiment of particular men who have already been attested.

6. Lord Derby hopes that the practice of local education authorities in respect of war allowances will not be altered to the disadvantage of men who now offer themselves for military service. Moreover, while he emphasises the desirability of early decision to undertake military service, he hopes that unduly short periods will not be prescribed within which a man must be attested if he is to enjoy the benefit of a war allowance. The Board, of course, assume that, whatever date is fixed as the end of such a period, actual embodiment, as distinguished from attestation, within that period will not be required.

7. As regards the arrangements for carrying on the schools with depleted staffs, the Board can at the present moment say no more than that they will meet the difficulties of local education authorities and governing bodies in a sympathetic spirit. It is, of course, understood that any arrangements made for carrying on the schools in the absence of the normal staffs will be regarded as purely temporary in character, adopted for an emergency, and that they will be determined as soon as possible after the war.

¹ Board of Education Circular 926, November 9th, 1915, to Local Education Authorities and Governing Bodies of Secondary Schools.

THE HORNBOOK.

MANY of us learned our A.B.C. from a primer or a large paper placard hung on the schoolroom wall, but our grandparents, our great-grandparents, and several generations before them learned their letters from a hornbook. Once a common object in the hands of every school child, especially in England and America, this early first-lesson book is strangely enough now almost extinct.

The hornbook consisted of a sheet of paper inscribed with the alphabet, the nine digits, and sometimes the invocation and the Lord's Prayer, attached to a square board covered with a thin sheet of transparent horn to prevent the copy being torn or soiled by the dirty fingers of the youthful students. It had a handle, usually at the bottom formed by the extension of the board. The reverse was ornamented with a picture or design either on paper or leather, the wood, horn, and paper or leather being held together by a narrow frame or border of brass or leather tacked on. In general the hornbook had the appearance of an ornamented modern butter-paddle or short-bladed bat, for which it seems they were often used, being termed "battle-dores." Most of them had a hole in the handle through which a string or ribbon was passed to form a loop, and thereby enable the scholar to carry it hung over his arm attached to his girdle, thus preventing its loss.

The Smithsonian Institution, Washington, is in possession of a remarkable two-volume work by Andrew W. Tuer, in which the author presents an interesting treatise on the history of the hornbook. The volumes are illustrated profusely, showing reproductions of hornbooks of different types and periods, many of which are on exhibition in the division of graphic arts in the United States National Museum. Mr. Tuer estimates that there are perhaps about one hundred and fifty of these relics now in existence, most of which have been unearthed since the exhibit of the Worshipful Company of Horners held at the Mansion House in 1882, at which time only eight hornbooks were known to exist. He states that without the assistance of the Press he would never have heard of a quarter of the examples of these rare curios described and illustrated in his work.

These forbears of the primer are supposed to have been invented by an overworked schoolmaster who, tired of constantly making new and careful copies of the alphabet and figures for his careless pupils to destroy and lose, devised the plan of making his copies more durable by attaching them to wooden plaques and covering them with thin sheets of horn. The first arrangements of this sort, which are supposed to have appeared in about the year 1450, although some alphabetical tablets may have preceded them, comprised the alphabet, the digits, and the Lord's Prayer in Latin. The earliest were hand-written, but after the invention of movable type they were printed in black and Roman type.

The first English hornbooks appeared in the early part of the sixteenth century, from which period until the reign of George II. they were common and very

popular. They are mentioned in English literature, and are the subject of a poem by Thomas Tickell, a contemporary of Addison and Steele; while Shakespeare, Bunyan, Peacham, and Ben Jonson also write of them. The hornbook is depicted in many works of art, cuts, and prints of the fifteenth, sixteenth, and seventeenth centuries. It was probably taken to America by the early settlers, that their children might continue their studies and learn to read, and it is alluded to by Americans in writings, journals, and so forth dated 1708, 1716, and 1760, although scarcely any originals exist to-day.

Like all copies and reproductions of any one thing, the editions by various makers deviated, so that we find many different examples of this book. Some of the alphabets are shown with both upper and lower case letters, and printed in many styles of type; some of the hornbooks preserve the prayer, while others show the alphabet enlarged to cover the whole space; yet they all are seen to be related and bear a certain resemblance to the earliest copies. Usually the letter "A" was preceded by a cross, indicative of a pledge of faith, and in recollection that some of the earliest books of this sort appeared in the form of the cross and were connected with religious customs or the belief that learning led to piety. From the cross came the term "Criss-cross-row," which was applied to both the alphabet and the hornbook as early as the fifteenth century and as late as the eighteenth, although many forms of spelling were used. Even to-day Somersetshire folk term the alphabet the "Criss-cross-lane."

Many trades entered into the construction of the hornbook, one writer having estimated thirty, yet its cost of production must have been insignificant, since it sold for only one or two pence per copy, although not long since as much as £20 and £25 has been paid for a single original.

While the middle classes were evidently satisfied to have their progeny learn their A.B.C. from a cheap wooden-mounted hornbook, the aristocrats and well-to-do would have nothing but the best, and to-day there are in existence several made of bone, ivory, silver, pewter, and lead, and more recent issues on cardboard and paper. The search for examples of this ancient book of learning has aroused much interest among the fakers, as well as collectors and historians, so that imitations have appeared. Mr. Tuer describes several spurious copies, and relates how he discovered their fabrication.

Julius Caesar. By Ada Russell. *Anselm.* By E. M. Wilmot-Buxton. *Peter the Great.* By Alice Birkhead. *Garibaldi.* By F. J. Snell. *Victoria.* By E. Gordon-Browne. (Harrap.) 1s. each volume.—These volumes are all included in Messrs. Harrap's excellent series, "Heroes of All Time," which now extends to some thirty items. We have had occasion in previous issues to give favourable notices of other volumes in the series, so that all we need do now is to say that these new issues show the same admirable features as their predecessors, viz., clear and interesting narrative, attractive illustration, and good print. The series is rapidly becoming a valuable library of brief historical biographies.

HISTORY AND CURRENT EVENTS.

As the months of this great war follow one another we realise more and more how unparalleled it is in history. It is now a twelvemonth since the armies of Germany, on one hand, and those of France and Britain on the other, began to face one another in almost the same positions as they still occupy on a line extending from the North Sea to the heights of the Vosges mountains. Certain events have been singled out as "battles" in the old sense of the word, but the long struggle of trenches against trenches should rather be regarded as one long battle of a new kind. We in this country do not know with any certainty the movements of the enemy, but we do know that our own forces have been relieved from time to time, and that some of our friends have returned on short leave to their homes to recuperate for a renewal of the struggle. When in the world's history before now has a battle lasted so long? When have soldiers "taken holiday" from "a battle" in progress?

As the length of the front in the west is beyond any figures that even the great Napoleonic war afforded, so the conflict on the eastern frontiers of Germany and Austria is so vast that it is only with an effort that we can realise what is happening there. From the neighbourhood of Riga in the north to the plains of Galicia in the south there is a constant struggle, concentrating now at one front, now at another, but best regarded as one enormous battle on a scale beyond all previous experience. When the Russians, having advanced at first into Silesia and practically conquered almost all Galicia, began their retreat before the onslaught of fresh German troops, there was an attempt to parallel their conduct with that of their forefathers in 1812. But how different is the story of the present fight from that a century ago. That was conducted on a line of advance limited in its breadth. This is on a line limited only by the frontiers of the countries engaged.

A TWELVEMONTH ago we were discussing with much excitement the diplomatic history of the beginning of the war. The various Governments were publishing their versions of the quarrel and attempting to justify the action of their Secretaries of State and their ambassadors. We here have no doubt of the result of that dispute, but now it seems very far off and not much to the purpose. The war arose, not out of the incidents then discussed—they were but the occasion—but out of the hatred of the nations one for the other. Advocates of international arbitration have always hoped that wars would be avoided if States could be induced to submit their differences to an impartial tribunal. But what is to be done when the difference is one of existence; when nations feel, rightly or wrongly, that their life is at stake, that it is a question of life or death? Then there is no diplomacy available, the fight must "go on to a finish." The "souls of nations" are roused, and the conflict can end only with the exhaustion of one or the other.

So at least we should have written a month or two ago. But recent events in the Balkan peninsula, with

their bewildering suddenness, give us pause. Why has Bulgaria allied with her old oppressor Turkey against her powerful, if at times domineering, friend Russia? Is it because Bulgarians hate Serbians, or is it the work of her ruler acting contrary to the wishes of his people, and able, as Governments are able in these days, to crush opposition? Again, how long will Greece "halt between two opinions"? Does her king represent the policy of the nation, or Venizelos? We do not, cannot know, and it is a vain thing as yet to attempt the history of this war. That is the work of the next generation, if not of people still later to be born. We, who live in the midst of the conflict, must be, like the prophet Ezekiel of old, dumb for a time. Divine Providence is working on too large a scale for us, who are "of the dust," to do aught than wait in silence for its solution of our many problems.

ITEMS OF INTEREST.

GENERAL.

THE Education Committee of the London County Council has accepted suggestions for a reduction in expenditure amounting, roughly, to one-third of a million sterling, and to about 7 per cent. of the previous expenditure. It was pertinently asked during the discussion of the proposals, whether the £360,000 was to be contributed directly towards the expenses of the war or merely to be swallowed up by being spread over the rates. Little can be gained by sixpences saved to individual ratepayers; such reductions are too minute to matter. The detailed proposals, by which this reduction is achieved, may be divided under three heads: the cutting away of the "trimmings," the punishment of the child, and the exploitation of the teaching staff. The "trimmings" consist of the various special officers, such as the organising teachers of science and of physical exercises; of pictures in the schools, and of painting and cleaning the schools. The child is punished by the reduction in expenditure upon books and apparatus, etc., where the vote is to be reduced by nearly 25 per cent. The teachers are to be exploited since additional work is to be placed upon them, and they are expected to undertake work out of school hours if necessary, and as a war service. Imagine a school where substitutes, necessarily of lower efficiency, are at work in place of those who have answered their country's call; all the old staff co-operates loyally to minimise the deficiency, and now extra work is dumped on to the staff, to relieve the pockets of ratepayers by a few sixpences.

WE are asked to state that the National Union of Teachers' Executive does not ask for exceptional exemption for teachers, though it points out that more than 8,000 are enrolled already, and that the education of boys is suffering seriously thereby. The executive is asking that the local tribunals under Lord Derby's scheme shall give full consideration to representations made to them by local education authorities, as to the need for retaining a reasonable proportion of the men teachers in each school. The executive is also asking that teachers and others engaged in the public service

should, on enlistment, be treated by public authorities on the same footing as civil servants who join H.M. Forces.

APPLICATION has been made to the Royal Society of Arts asking that an examination in the English language for Belgian refugees should be provided by the society. The council is ready to add this subject to the list of subjects in the society's examinations for April or June next if a sufficient number of candidates enter. The paper would be specially adapted to the needs of foreigners, for whom the present examination in English is unsuited. It is proposed that the examination should be held under the usual conditions on one of the days between Monday, April 10, and Wednesday, April 19, allotted for the April examinations. But if, for any reason, a later date seems preferable, the subject can be taken in the May-June examinations (May 29th-June 7th). Further particulars may be obtained on application to the secretary of the society.

THE fourth annual Conference of Educational Associations will be held in the University of London, Imperial Institute Road, South Kensington, S.W., from Monday, January 3rd, to Friday, January 7th, 1916, inclusive. The opening address will be given by Sir Oliver Lodge, principal of the University of Birmingham, at 3 p.m., on Monday, January 3rd. The subject of his address will be "Education after the War." Twenty-one educational associations are taking part in this Conference, holding twenty-six meetings, which will be open to all the members of the constituent associations. There will be an educational exhibition in the East Gallery of recent textbooks and apparatus.

IN view of the interest which is now developing in education as a preparation for the citizen's life and duties, the Moral Education League has decided to devote its two meetings at the Conference of Educational Associations in January next to a discussion of the question of training for citizenship. These will take place on Thursday, January 6th next, at the University of London. Admission will be free, but it is advisable to apply for tickets beforehand by letter, in order to secure places. The address of the league is 6, York Buildings, Adelphi, W.C.

THE revised Regulations for the Training of Teachers for Secondary Schools contain a new feature which to us is of special interest. When these Regulations were last revised, two years ago, we directed attention to the provisions whereby a secondary school might be made a centre of training, and we pointed out the dangers that appeared to us to lurk in such a system. In particular we alluded to the danger that the training might become merely a means of carrying on a certain set of traditions, rather than of turning out men and women with their minds open to new ideas. At the same time, we admitted the faults of the training colleges—faults that were of another order. We are therefore glad to find that the Regulations now issued provide for a type of training which may be found to combine the advantages, and to avoid the disadvantages, of the two

types hitherto recognised. A training college, or a training department of a university, may now work in close connection with a group of approved secondary schools, the college taking the responsibility of training the student in the principles of teaching, and delegating to the school authorities the responsibility of the practical training. Provided that sufficient safeguards are taken to prevent the two portions of the course from forming water-tight compartments, the plan ought to work well. At least, it seems well worth a fair trial.

THE National Home-Reading Union has included in its "Book Lists" for the session 1915-16 several courses of reading bearing upon the war. These book lists are drawn up by experts with a view both to the merits of the books chosen and, so far as possible, to their cheapness. Articles dealing with these courses appear month by month in the *Home-Reading Magazine*, and thus the various subjects may be studied systematically and under trustworthy guidance.

THE Education Committee of the West Riding has issued handbooks regarding the preliminary education of elementary-school teachers and also the scholarships and exhibitions for 1916. The many additions and alterations to previous regulations attest the keenness of this committee towards the improvement of educational machinery. Among these changes we note that certificated teachers who have had fewer than two years' experience of teaching in a public elementary school may be admitted for the ordinary two year course at Bingley Training College for Women, which can accommodate 200 resident students. On the other hand, the regulation that candidates for training-college studentships must take the complete matriculation examination of the Joint Matriculation Board of the Northern Universities, and that "equivalent examinations cannot be accepted," tends unnecessarily to cramp the activities of the secondary schools of the West Riding. County scholarships for women, value £50 per annum, are available for courses in the teaching of housecraft.

LEAFLET No. 38 of the Historical Association contains the substance of two papers read before the London branch of the Historical Association during the early part of the year. The first, on Norman London, is by Prof. F. M. Stenton, of Reading; the second, on medieval London, by Mr. C. L. Kingsford, well known as the scholarly editor of Stow's "Survey." They both present points of interest, though they differ widely in scope and plan. Prof. Stenton, who is an authority on Early English constitutional questions, deals mainly with the institutions of the Norman city. He brings evidence to show that London was the administrative centre of a large rural district, and suggests that this may have been no other than "the mysterious province of the Middle Saxons." He points out how important London was to the commercial world of the time; it stood upon a commanding situation on the Thames; a vast network of roads radiated from it; it formed a terminus of one of the great trade-routes connecting East and West. He describes its system of government—its tri-annual

Folkmoor, its weekly Hustings (whose origin he inclines to ascribe to Canute), its many Sokes, its numerous fortified houses or Burhs. He tells us of its privileges under the Charter of Henry I., of the vain effort of that king to centralise the administration under a Justiciar, and of the growth of the Commune during the fifty years 1141-1191. Altogether Prof. Stenton provides a valuable and original study. Mr. Kingsford deals more with social and topographical details. From his wealth of knowledge he gives descriptive accounts of the aspect of the medieval city, its houses and churches, the civic and domestic life of its inhabitants, and the pageants which varied the monotony of their days.

THE wave of enthusiasm for popular education which is passing over India has made possible the holding of the first library exhibition in India, at Mehsana, the centre of the district of Kadi, in the native state of Baroda. This exhibition is described and illustrated in the issue of *The Library Miscellany* for January and April, 1915, which is published in Baroda. The opportunity of holding such a unique exhibition occurred during a visit of H.H. the Maharaja of Baroda to Mehsana for the purpose of opening a new agricultural and commercial museum. The purpose of the exhibition lay in the advertisement of the public library facilities which exist in the Kadi district, with a view to the extension of these beneficent institutions. *The Library Miscellany* contains quite a host of facts regarding not only the library movement in India, but also the activities of public libraries elsewhere; for example, it is chronicled that in Brighton it is possible for ratepayers to conduct their library exchanges through the tramway conductors for a fee of one penny, which covers the cost of the collection of the book and the delivery of a new book in exchange.

THE current issue of *Science Progress* contains three articles of interest to mathematical teachers. The first, on the Napier tercentenary and the invention of logarithms, is contributed by Dr. C. G. Knott, who is acting as editor of the memorial volume. The congress is of interest as being the last international gathering before the war, and for the fact that the opening address was delivered by Lord Moulton, who is now doing such great national service in organising the production of high explosives. Dr. Knott suggests the reproduction by means of photography instead of by typesetting of Dr. Edward Sang's great collection of manuscript tables of logarithms now in the care of the Royal Society of Edinburgh. The second article, by Mr. W. Stott, has for its theme the economy of labour in mathematics. He deals especially with the work of Michael Dary, a contemporary of Newton, and his solution of algebraic equations by the process of iteration. Sir Ronald Ross communicates part i. of his method for the solution of equations by operative division, which is a modern outcome of Dary's. An essay by Mr. F. A. Mason on research and the coal-tar dye industry is also worthy of mention.

School Science and Mathematics (vol. xv., No. 8) for November contains several papers which deserve

attention. In a paper on "Number and the Quadratic," Prof. Richard Morris discusses in detail the general formula for the roots of a quadratic equation. There is also a fully illustrated description of the physics laboratory of the late Ernst Grimsehl, a well-known teacher in a Hamburg Oberrealschule. Other minor contributions contain suggestions useful to teachers of experimental science.

THE *Educational Times* for November contains copious extracts from the examiners' reports on the recent College of Preceptors' examinations for schools. Describing the position of the working classes at the end of Victoria's reign, a candidate wrote: "The working man was a magnate in himself. He had a big wage, and if he wanted more he had only to strike and he generally got what he wanted." The Black Monks were "men from the Black Country," and the Black Friars were "pirates who lived in caverns and pounced upon travellers on the roads." The English examiner remarks that junior candidates were too loyal to the notes in their editions of plays of Shakespeare; and the dean emphasises this remark by a note to the effect that the essential object in reading a play is to extend the reader's knowledge of human character and human motive, and that in teaching an English author persistent attention should be paid to the "meaning and use of metaphor, and the expansion of its vivid but false terseness into the tame veracity of the tedious simile."

THE war causes us to take stock of our equipment as teachers, and to strike a new balance between the usefulness of the subjects we teach to the community and the disastrous results which would follow from an overcrowded curriculum. Instead of the maxim, "— as usual," we approach a clearer view of the situation when we realise that "nothing will be the same again." The *Educational Supplement* to the *Times* quotes from a speech by the rector of the University of Berlin, who admits that German and foreign scholars for the rest of their lives will "walk along together as strangers." The *commercium litterarum* will cease for a generation. A more practical instance of this feeling comes to light in the current issue of the *A.M.A.*, in an article in which is advocated the inclusion of political economy as a subject for secondary schools on the ground that many of the pupils pass into business careers in banks, insurance offices, etc., where the principles of the science should, and usually do, underlie practice. We note the suggestion as a sign of the times.

DR. MONTESSORI contributes an article on "The Imagination in Childhood" to the November *Educational Supplement* to the *Times*. Children are but imperfect forms of more mature human beings, and it is an error to aim at prolonging this childish immaturity; children who pretend to ride horseback on canes, or who thump the table as if it were a piano, are not manifesting imaginative powers but exhibiting in childish concrete fashion their unsatisfied desires for a real horse or piano; and it would be wicked to cultivate this so-called imagination by withholding

from a child a horse or a piano which we could afford to give him. Much so-called imagination is ignorant credulity, since a child believes an adult who plays Fröbelian games and announces that a block is, at one time, a horse, and, at another time, a church, or who insists upon the maintenance of the tradition of Father Christmas. Intelligence should displace credulity, and truth should stimulate the development of the child towards maturity, since truth is the basis of every great artistic production of the imagination.

"OUR children act, feel, think, and learn in platoons. Our methods are mass methods." These dicta from Prof. Stanley Hall provide the keynote of an article on "The Individual and our Educational System," by Mr. Wilson C. Morris, in *School and Society*, for October 16th. In the public schools, the undergraduate departments of the large colleges and universities of the United States, the individual is neglected. Group teaching has been carried to an extreme, although the elective system has been adopted as a partial solution. Children differ so greatly in capacity that equal opportunity for all should not mean the same curriculum for all, and the pride in *uniformity* of performance should cease to be a mania in the public schools. Americans are wide awake to the fact that the high school has not accomplished during thirty years of marked growth what was anticipated. This failure is due to the circumstance that high-school pupils were brought together in large groups and fed indiscriminately on a formal subject-matter by teachers with cut-and-dried methods. This article is not without interest when English authorities are increasing the sizes of classes as a specious war economy.

THE editor of *Indian Education* gives a sound, common-sense view of the profession of the schoolmaster in the October issue of that magazine. The calling of a teaching is neither more nor less honourable than most other callings; in fact, many other callings demand qualities more exceptional than those needed by teachers. Doctors may sacrifice life, judges may ruin innocent men, mariners may wreck a ship; the schoolmaster may make mistakes, but usually he has an opportunity to retrieve his error. Hence the claims for pecuniary reward are higher in the case of professions where there is more risk of failure. The schoolmaster is allied to the artist, and his work lies amidst healthful material; he is not compelled to deal with the hideous sides of life. The schoolmaster may lose enthusiasm from prolonged contact with the young, but his holidays are a compensation. The good schoolmaster enriches the world, he preserves something of human talent, he prevents some of the waste of human power, he gives the new generation a better start in the work of living.

PRINCIPAL HENDY contributes to the *Educational Record* for October a second article on "Ends and Means in Education." In reply to those critics who argue that, since primary education fails to fit the child for any specific calling, it is immaterial whether the school-leaving age be twelve, thirteen, or fourteen, the writer states that, even if a boy carries away from

school no knowledge at all, the years spent there are by no means wasted. The boy gains by his escape from labour, and by the systematic discipline which he endures. To remedy the admitted deficiencies of elementary schools, vocational schools should be encouraged. All these considerations are necessary to combat the specious economist who is making the war an excuse for overthrowing the building which has been erected during thirty years of educational endeavour. The people should be alert to prevent permanent harm being done to the spiritual forces of the nation. A national council should be chosen to guide a statesman of the first rank who, as President of the Board of Education, will preserve, maintain, and even extend our educational system against the materialistic forces which are increasing in strength because war compels attention to material things to the exclusion of those of the spirit.

M. P. MIEILLE contributes to *Modern Language Teaching*, the official organ of the Modern Language Association, an impassioned appeal to the universities and schools of the Quadruple Entente to cease to teach the German language. He argues that the political influence of a foreign country on England or France depends largely upon the teaching of the foreign language in the schools. The present struggle is for very existence. Germany has committed crimes as a nation, hence Germany as a nation must be punished. Material punishment by loss of territory or by indemnity does not entirely meet the situation; intellectual punishment is demanded, therefore suppress the teaching of German. But, it may be urged, such a step would handicap the Allies in future dealings with Germany; no, argues M. Mieille, the conquered must learn the speech of the conquerors. Or, another objection, you cut off your youth from a vast intellectual treasure; no, what is worthy of the trouble will be translated, and German thought will gain by the process. Still again, our youth will lose an intellectual discipline; not at all, let those who care for difficult tasks learn Russian. We look forward to the second article on international languages.

In the same journal occurs a reprint from *Le Temps* of an article by Mr. Cloudesley Brereton on "French in English Schools," in which it is pointed out that French is the foreign tongue most frequently taught in Britain, and that French is chosen by a considerable number of matriculation candidates. As yet, no foreign language is taught in the primary schools. What reforms are possible? Students should be exchanged between French and English universities. In primary schools, arrangements should be made for those children who may wish to learn French. One school in a district should teach French to specially chosen pupils, or supplementary lessons should be given, say on Saturday mornings, to those who so desire. The limitation of classical studies to those who can profit from them would increase the numbers of students of French, and would probably cause French to become obligatory for matriculants; this is a secondary-school reform.

SCOTTISH.

IN connection with Lord Derby's appeal, important action has been taken by the leading school boards. Glasgow, Edinburgh, Aberdeen, and Govan have resolved that all teachers of military age who enlist before November 30th shall have their Army pay supplemented by the difference between it and their present salary, but that no allowance will be paid to those who enlist or "are fetched" after that date. This is a generous offer, and there can be but little question of the response of those concerned. At the same time, it is necessary that care should be taken to keep a sufficient number of men in the schools, especially in the secondary schools, to enable the work to be undertaken in a fairly satisfactory manner. Indiscriminate, unregulated enlistment will lead to educational disaster. The Education Department would be well advised to consider the advisability of setting up a tribunal to determine between the conflicting claims of war service and school duty. All will be agreed that at a time like this, the former must come first, but there is no necessity, yet at least, to throw the latter entirely to the dogs of war. The question of obtaining substitutes for those who enlist is another matter that might well come within the purview of such a body as is here suggested.

WHEN the Scottish Teachers' War Fund was established it was resolved to allocate all contributions to one or other of the national relief funds, and no provision was made for teachers as such. It is now felt that the time has arrived for teachers to consider their obligations to members of their own profession. More than a thousand are said to have joined the colours, and several have already made the supreme sacrifice. As the war proceeds and the new Army goes into the fighting line, death and wounds will claim many more. With these facts before them the committee in charge of the matter has resolved to broaden the basis of the fund, and to set aside part of the contributions as a special fund for teachers who are disabled permanently, and for the dependants of those who fall in service. The committee has issued an appeal to every teacher in Scotland to support the new movement, and already a gratifying response has been made. Up to date the committee has raised more than £20,000, of which £17,000 has been for general relief purposes, and £3,000 for incapacitated teachers.

THE School Board of Glasgow, by a narrow majority, has decided to revoke its compulsory by-laws continuation classes at the close of the present session. The arguments used in favour of this course were economy, the doubtful educational value of the classes, and the objections raised to them by parents and employers. These arguments have ever been the watch-words of educational obscurantists, and have been employed against every movement for advance in education during the past fifty years. It is very evident that the economy argument is going to imperil many educational movements that have, in the face of much opposition, won for themselves a certain measure of success. Several school boards have abolished or cur-

tailed their evening continuation classes on the ground that they were losing money by them. They have persisted in this policy in the face of an earnest appeal from the Department to reconsider the matter in the interests of the youth of their district, and they justify themselves by quoting the circular that has been issued to public bodies advising them to exercise the strictest scrutiny over all expenditure. All the omens point to dark and still darker days for education, and this at the very time when, owing to loss of the flower of our young manhood, our children have become doubly precious as a national asset. It is time the friends of education were rallying to its defence.

THE Scottish Teachers' War Service Committee is to be congratulated on the excellent "Scheme of Lessons on Thrift" which it has just issued. In the introduction it is explained that the scheme is a store-house of information from which individuals can draw as much, or as little, as they please. The booklet is meant for pupils of all ages and all classes, but the value of the appeal will in each case depend upon the selective powers of the individual teachers. The "Lessons" are divided into two parts, one bearing on thrift in general, and the other on thrift in times of war. Appendices are added giving information regarding the setting up of school banks and the purchase of war vouchers. The booklet, which has been compiled by Mr. George Pringle, rector, Peebles High School, will help to give point and direction to the teachers' efforts to bring home to their pupils both the need and the value of that self-denial and foresight which thrift involves. Copies, price 6d. each, may be obtained from Mr. Hugh Cameron, 34 North Bridge Street, Edinburgh.

INTIMATION has just been made that the next written examination for leaving and intermediate certificates will begin on Tuesday, March 28th, 1916, and will finish on Wednesday, April 5th. The conditions for presentation and the arrangements for examination are the same as in previous years.

IRISH.

TOWARDS the end of October the Government published as a Blue-book the Report of the Intermediate Education Board for Ireland, under the Intermediate Act of 1914, as to the application of the teachers' salaries grant. This is perhaps the most remarkable document ever issued in connection with Irish secondary education. The grant, usually known as the Birrell grant, of £40,000, was paid over to the Intermediate Board in September, 1914, and of it £39,970 was distributed to the schools in March, 1915, the remaining £30 going in expenses. The mode of distribution was to each school in proportion to its grant from the Intermediate Board as a result of the examinations in June, 1914. The schools were then asked to furnish the Board with particulars as to the salary, qualifications, and form of agreement of the lay teachers employed. A properly qualified teacher should receive, if a male, £140 non-resident, or £110 resident, if a female £90 non-resident, or

£70 resident, should be a graduate or have been engaged in teaching for two years, and should be under a three months' contract.

THE report states that the total number of intermediate schools is 337, and the total number of intermediate pupils between twelve and nineteen years of age (as defined by the teachers' salaries grant rules) is 17,470. Two hundred and eleven schools, with 11,994 pupils, are under Roman Catholic, and 126 schools, with 5,476 pupils, are under non-Roman Catholic management. The average number of pupils in Roman Catholic schools is fifty-seven, and in non-Roman Catholic schools forty-three. With regard to the lay teachers, we have the following facts: in the Roman Catholic schools the number of duly qualified lay teachers is forty-six, and in non-Roman Catholic schools it is 237. The number of duly qualified lay teachers in Roman Catholic schools is one for every 260 pupils, and in non-Roman Catholic schools one for every 23 pupils. Further, there are in Roman Catholic schools 414 lay teachers not fulfilling the conditions, and in non-Roman Catholic schools 416 such teachers.

UNDER the conditions of the grant the number of qualified lay teachers should be one for every forty pupils, and when this is not the case in either group the Lord Lieutenant has power to alter the conditions for that group. Will he do so? Before answering that question it must be remembered that the grant was not paid until the end of March, and between that time and the end of the school year in June, schools which did not already fulfil the conditions wholly or in great part had not much time in which to set their houses in order, and a similar report issued this time next year would probably tell a different tale. Also, at best the present conditions are temporary, as the Registration Council has not yet sat or formulated conditions of registration under the Act. Striking, however, as the figures given are, they only fill two pages of the Blue-book, and the rest of the book, sixty-four pages, gives full particulars of all the lay teachers qualified and unqualified in each school, with names and salaries, and whether under contract or not, of the number of pupils, and of the amount of teachers' salaries grant received. No such revelation has ever been made before of the condition of teachers in Irish schools.

THE Schoolmasters' Association, at its annual meeting this autumn, made the following recommendations to the Board of Intermediate Education:—(1) That girls who have passed the intermediate examination without algebra and arithmetic, be allowed to offer geometry as an alternative to arithmetic and algebra in the middle and senior grades; (2) that the questions set in the junior grade honour paper in history and historical geography are above the capacities of students under sixteen years of age; (3) that the time allotted to the examination papers in Latin and Greek should be extended to two and a half or three hours; (4) that history and historical geography (honours paper only) be added to the list of subjects in which a pass can be obtained; and (5) that in rule 41 applied

mathematics should be transferred from Group D to Group C, and that in Group C the senior and middle grades should be given the choice of any three of the following:—Arithmetic with algebra, geometry, trigonometry, and applied mathematics. It also passed a resolution disapproving of the method of allocating the £40,000 grant on the basis of the intermediate results as being unsatisfactory, especially to the smaller schools.

THE Department announces that a limited number of scholarships and teacherships-in-training, tenable at the Royal College of Science, Dublin, will be offered in 1916. The scholarships are of the value of £50 a year for four years, in addition to free instruction; and the teacherships-in-training entitle their holders to free instruction and a maintenance allowance of 21s. per week during the course of forty weeks. The examinations will be held on June 27th to June 30th. Applications must be made before June 1st.

THE Department also announces new arrangements for certificates for teachers of drawing and art, and proposes to form a register of candidates for the art teachers' certificate who will be exempted from attendance at the more elementary examinations in the art courses, and who will be eligible for the certificate upon satisfying certain conditions. Full particulars may be obtained from the Department.

THE professor of education in University College, Dublin, announces a course of four public lectures during the Michaelmas term on "The Educational Value of Irish History," and four more in the Hilary term on "Methods of Teaching Irish History." Admission to these lectures is free by ticket, to be obtained at the college.

WELSH.

At the final meeting of the National Eisteddfod Committee, a grant of £150 was received from the Eisteddfod Association toward making up the deficit in the year's accounts. This was in addition to the provision of prizes and to many individual subscriptions by members of the association. The remainder of the deficiency, which has to be made up by the guarantors, amounts to £654; this will necessitate a call of 12s. 6d. in the pound on each guarantee. Considering the circumstances the meeting is held to have been very successful. The visit of Mr. Lloyd George was a great attraction, and the proceedings were carried out with great spirit.

ONE of the most remarkable features of the Welsh Sunday School is its adult classes. It is quite a common thing for earnest Bible students to attend the Sunday School all their lives. There died on the last Sunday in October a retired quarryman of Blaenau Ffestiniog, named Robert Jones, who from his youth up to within a week of his death, at the age of ninety-six, had been a regular attendant. He was a deacon of his chapel, for the building fund of which he had collected more than £700.

THE Board of Agriculture's returns show a great decrease during recent years in the extent of land used

for producing cereals, and it does not appear that the land is used for any other purpose than pasture—that is, it is not used for root crops or for gardening. Farmers are considering how to meet the difficulty of increasing their food production, as they are urged to do in Lord Selborne's speeches, while they are faced by the shortage of labour caused by the war. In most Welsh counties agricultural committees are being formed for consultation and mutual help, sometimes with the aid of the county committee, and it is foreseen that this co-operation may result in such an organisation as shall enable British farmers to hold their own after the end of the war. There is a considerable demand that boys should be released from school work between the ages of twelve and fourteen, that some readier means of obtaining their services than application to the labour bureaux should be provided, and that tenant farmers should be released from covenants forbidding them to plough up pasture land. The Board of Agriculture has opened a campaign for increasing the produce of the land, and the first meeting was held at Pwllheli on November 1st.

PROF. SIR HENRY JONES has commenced his lectures on the war. Three of the series were delivered at Cardiff during the second week of November. He emphasised the nature of the war as a struggle of moral conceptions and of the personalities of nations. Thousands who had no joy in killing were fighting and laying down their lives on the battlefield for an idea, for a principle, and for the rights of the weak. He appealed to all his hearers to aid the cause in every possible way, whether military or other.

It is suggested that in the new parish church at Llangammarch a monument should be raised to the memory of the Rev. Theophilus Evans, the author of "Drych y Prif Oesoedd," who, with his nephew, Theophilus Jones, the author of the history of Breconshire, is buried in the churchyard.

MR. IDWAL O. GRIFFITHS has been elected to a fellowship at St. John's College, Oxford, for research in physics, with special reference to aerial warfare. Mr. Griffiths is the son of an elementary schoolmaster at Blaenau Ffestiniog, and is one of the many pupils of Welsh intermediate schools who have had distinguished careers. He specialised in mathematics and won scholarships at Aberystwyth College and at Oxford. He became a lecturer in St. John's College on science and mathematics, and is a Lieutenant in the Royal Flying Corps.

MANY men of military age who are engaged in teaching have been much exercised in mind as to which was their more pressing duty, to join the forces of the Crown or to keep their part of the educational machine moving; advice has been sought in various official quarters, and the general sense of the answers has been that a man could not appraise his own relative value to the school and to the Army, and that the decision should be left to the school and military authorities jointly. A very strong hint as to the

opinion of the Board of Education is contained in a circular just issued by the Welsh Department, asking all persons capable of teaching in the intermediate schools to register their qualifications with the Welsh Appointments Board with a view to being employed as substitutes for men on service. A happy solution of the difficulty has been reached in the case of Mr. F. W. Phelps, of Llangollen County School, whose place is held by his wife during his absence with the forces.

RECENT BOOKS ON EDUCATION.

- (1) *Studies Introductory to a Theory of Education.* By E. T. Campagnac. 133 pp. (Cambridge University Press.) 3s. 6d. net.
- (2) *Methods of Teaching in High Schools.* By S. C. Parker. 529 pp. (Ginn.) 6s. net.
- (3) *Teaching: its Nature and Varieties.* By B. Dumville. 446 pp. (Clive.) 4s. 6d.
- (4) *Psychology of High School Subjects.* By C. H. Judd. 515 pp. (Ginn.) 6s. net.
- (5) *The Lesson in Appreciation.* By F. H. Hayward. 234 pp. (New York: The Macmillan Co.) 3s. 6d. net.
- (6) *Aims and Methods in the Teaching of English.* By Arnold Smith. 181 pp. (Constable.) 2s. net.
- (7) *Montessori Examined.* By Dr. W. H. Kilpatrick. 95 pp. (Constable.) 1s. net.
- (8) *A Student's History of Education.* By F. P. Graves. 453 pp. (New York: The Macmillan Co.) 5s. 6d. net.
- (9) *Readings in Vocational Guidance.* By M. Bloomfield. 723 pp. (Ginn.) 10s. 6d. net.
- (10) *Commercial Work and Training for Girls.* By J. Eaton and B. M. Stevens. 289 pp. (New York: The Macmillan Co.) 6s. 6d. net.
- (11) *Play in Education.* By Joseph Lee. 500 pp. (New York: The Macmillan Co.) 6s. 6d. net.

(1) To borrow an American writer's phrase, there is "more thought to the square inch" in Prof. Campagnac's book than in any other on our list, or indeed than in most treatises on the subject. We hope this book will have the influence it deserves, but we have our doubts. The author takes up a position of easy detachment, and evidently sets little store by the ordinary stock-in-trade of the professor of education. This is at once the strength and the weakness of the book, for if the author does not attract a multitude of readers, he will yet not be neglected by the thoughtful few. Finding in the ideals of the past the source of theory, he gives a scholarly review of certain of those ideals, shows how they served their purpose and how they need re-expression to-day, and, finally, applies his ruling principle to certain practical matters. Among the latter we note in particular his sensible and comforting remarks on the lot of a person who has many subjects to teach.

(2) It has been alleged, we think with justice, that the text-book of method has in the past been written too much from the teacher's point of view, and not enough from the child's. Against this tendency there have appeared recently several text-books, of which Prof. Parker's "Methods of Teaching in High Schools" is a noteworthy example, emphasising methods of *learning* rather than methods of *teaching*. The author recognises five types of learning: acquiring motor control, as in learning the pronunciation of a foreign language; associating symbols and meanings, as in learning a vocabulary; reflective thinking, as in solving problems of all kinds; forming habits

of harmless enjoyment, as in learning music and literature; and training in expression, as in composition, drawing, dramatisation, and the like. The treatment of these types forms the main substance of the book. Much use is made of the results of experimental psychology, and there are abundant references to educational literature. The book represents a sound tendency, and, as they say in America, it is "well made."

(3) Written in a kindred spirit is a new work by Mr. B. Dumville, entitled "Teaching: its Nature and Varieties." The author does not profess to deal specifically with the various subjects, but rather with the processes involved in all instruction, whatever the subject may be. In the language of pedagogy, his theme is not "special" but "general" method. He differentiates various forms of the teaching process, more or less parallel to those set forth by Prof. Parker, but his treatment is not so radical as that of the American writer, in that he does not lay so much stress on methods of learning as distinguished from the correlative methods of teaching. Mr. Dumville's book is well written, it is abreast of recent investigation, and it fills what was, so far as we are aware, a vacant place in English pedagogy. The questions at the end of each chapter will add to its value as a text-book.

(4) Turning now to the special methodology of subjects, we notice the new work by Prof. Judd, an American educational psychologist of high standing. He attempts a psychological analysis of mathematics, language, manual skill, science, the fine arts, and history; and he applies his analysis to the problems of the schoolroom. He expects to be reproached by his fellow-psychologists for travelling too far from his beat, and by the subject-specialists for unwarranted incursions into their domain, but to the latter he would retort that they habitually talk in psychological terms which they cannot justify. For example, he quotes passages from Prof. D. E. Smith, a well-known writer on mathematical teaching, to show how that writer flounders at those places where mathematics and psychology meet. We think that Prof. Judd's discussions are of unequal merit, but that, in the absence of the *rara avis* who is both a subject-specialist and a respectable psychologist, they are distinctly valuable.

(5) As every teacher knows, the æsthetic aspect of education has been neglected liberally in the past. Some progress has been made in recent years, but not much. We have got so far as to recognise, for instance, that the walls of the classroom should be adorned with good pictures, rather than with maps and diagrams; but we still labour under the delusion that if only the pictures are there, they may be trusted to tell their own tale, and unaided to shed abroad their influence on our scholars. In the case of music and poetry we do worse, for we interpose a dull and deadening stage of technique, whether of notes or of words, before we let the child get to the real thing. Against such practices as these the versatile Dr. Hayward directs his new work on "The Lesson in Appreciation." As a writer, Dr. Hayward has, of course, to be taken on his own terms, and these are not always easy to accept. But the substance of this book, in which he breaks new ground, is distinctly good, and he has many suggestive things to say. We think, however, that he takes "the personal qualities of the teacher" (all-important in this connection) too much as a *datum*. They are improvable, and teachers ought to be told specifically how to improve them. "Harsh voices," "lethargic attitudes," and even "neurotic gestures" are amenable to treatment.

(6) One of the most striking features of Mr. Arnold

Smith's work on "The Teaching of English" is the stress that is laid upon the mutual relations of principles and practice. Mr. Smith unites in himself with considerable efficiency the educational philosopher's breadth and the practical schoolmaster's grasp of detail. That he is also alive to recent developments is sufficiently shown by his suggestive chapter on the dramatic method of teaching. Subsequent chapters deal with the drama, poetry, and prose, as instruments of school education, and a final chapter has many excellent remarks on composition. We doubt whether Mr. Smith has done sufficient justice to the case of the non-literary boy, who should still be encouraged to read—if only the literature of his hobby. But we have no doubt that this book well deserves the attention of teachers of English in schools of all grades.

(7) We have from time to time noticed in these columns several volumes, critical and expository, on the Montessori system, but never one with greater satisfaction than Dr. Kilpatrick's. The writer assumes on the part of the reader such an acquaintance with the system as can be gathered from a perusal of Mme. Montessori's principal work, "The Montessori Method," and he addresses himself to a fair but candid criticism of leading points—and of those only. He approves of Mme. Montessori's doctrine of liberty, though he finds it based upon an inadequate conception of development. He agrees with her views of self-expression and "auto-education," but finds her practical provision for them meagre. And he contrasts her "didactic apparatus" with vital experience of real situations—to the disadvantage of the former. The value of Dr. Kilpatrick's little treatise is quite out of proportion to its size, and we strongly recommend it.

(8) The position of the history of education in training-college courses is by no means a settled question, one of the unsolved problems being the relative values of a general study of a long period and an intensive study of a limited subject. Those who favour the latter, however, generally come round to the opinion that a broad outline course is indispensable for purposes of perspective. So we welcome Prof. Graves's "Students' History of Education," and all the more because it is not merely a condensation of his three-volume work on the same subject. We cordially agree with the point of view he now adopts, that for the ordinary student the history of education is most interesting and valuable when it throws light on the "origin and significance of current practices." The book is well planned, and bears the hall-mark of learning and insight. We think it will be found useful in English training colleges, notwithstanding that it gives more attention to American history than would be natural on this side of the water.

(9) What shall we do with our boys—and girls? is a question that has come to the front since the dawn of the twentieth century. The system of apprenticeship acted more or less as a winnowing fan, but with the extension of compulsory school education that system decayed, and for a great part of last century there was nothing to replace it. Hence our care committees and juvenile labour exchanges. In the somewhat colossal volume before us, the director of the vocation bureau of Boston, U.S.A., brings together about forty or fifty utterances and reports on the subject, showing what is being thought and done in America, and to some extent in England, by officials, teachers, and psychologists. The book collates and systematises a great deal of valuable material, and is more useful at this stage than an ordered treatise by one person could be. We notice that the scheme organised at Birmingham is singled out as one of the best in England for helping children to start life aright.

(10) Another book bearing on the same subject is "Commercial Work and Training for Girls," published under the auspices of the Co-operative Employment Bureau for Girls, Cleveland. The chief point of the book is that young office workers are inefficient, and that the blame must be laid at the doors of the private commercial schools. Poor training in English is found to be the chief cause of failure in office work. The private commercial schools employ unscrupulous methods of drawing pupils away from the high schools—offers of money, motor-car trips, and frequent personal visits, besides letters and circulars. The writers' conclusion is that the school's responsibility is to provide, in the first part of a pupil's schooling, opportunity to "try out his tendencies"; in the latter part, to provide vocational training, and to disseminate trustworthy information about work and training. There is perhaps a lesson here for places nearer home than Cleveland!

(11) The "renaissance of play" is a topic of not infrequent comment in these columns, and the latest addition to the literature of the subject, Mr. J. Lee's "Play in Education," well deserves attention. Mr. Lee rightly remarks that it is a pity we have to use the same word for that which is of secondary importance in adult life, but which is life itself in childhood. A barrier inevitably arises between child and adult. A few gifted grown-ups, such as Froebel and Stevenson, have—not crossed but—"peeped over and reported what they saw"; and Mr. Lee's book is meant to help ordinary folk, including teachers, to do the same in their degree. He recognises a baby age (one to three), a dramatic age (three to six), a "Big Injun" age (six to eleven), and an "age of loyalty" (eleven onwards)—the age of teams and gangs and guilds; and he discusses the kinds of play suitable for each age. The theory of play adopted is the biological theory associated with the name of Groos; but the book is free from unnecessary technical discussions.

THE NEW MAP OF EUROPE.

Some Frontiers of To-morrow: An Aspiration for Europe. By Prof. L. W. Lyde. vi + 120 pp. (Black.) 2s. 6d.

IN this little volume Prof. Lyde has expanded and illustrated a lecture which he delivered in December, 1914, before the Royal Geographical Society. It deals in broad general outlines with some fundamental geographical, ethnological, economic, and psychological facts which will have to be taken into account whenever the time comes to consider terms of peace at the close of the present war. Only one hypothetical consideration enters into Prof. Lyde's calculations, viz., "the implicit assumption that the Central Empires will be defeated." If the Central Empires are not defeated Prof. Lyde will have written in vain; for the frontiers which they would establish would be radically different both in principle and in detail from those which he advocates. If, however, the Allies are victorious, it is to be hoped that in the interests of permanent peace they will give earnest consideration to the data which are here laid before them. Prof. Lyde's main contentions are two, viz.:—(1) That political frontiers should be national, or, where that is impossible, assimilative; (2) that they should be anti-defensive. The terms "assimilative" and "anti-defensive" are not either usual or self-explanatory, and a large part of this little book is devoted to their elucidation.

Prof. Lyde regards the principle of nationality as that whose recognition and adoption offers the best prospect of an enduring settlement. He has, however, to face the fact that in many critical regions, such

as Alsace-Lorraine, Poland, and the Balkans, races and nations are so inextricably intermingled that no geographical demarcation is possible. Hence he urges that where it is inevitable that groups should be left in a position of subjection to an alien power, only such powers should be allowed to hold dominion as have shown "assimilative" capacity, that is, a capacity for governing, conciliating, and finally absorbing dependent peoples. In developing this theme, Prof. Lyde is, happily, able to assert that all the great Allied Powers—Britain, France, and Russia—have manifested assimilative virtues, while Germany, Austria, and Turkey have not. It is a providential coincidence that geographical principle should so entirely harmonise with our wishes and intentions in respect of this matter of subject nationalities. It would be positively wrong, from a geographical point of view, to allow our unassimilative enemies to retain any of the territories at present in their military occupation, and very doubtfully right to permit them to keep any of their unassimilated older possessions or to recover their colonies.

Prof. Lyde digresses to inquire how it is that our arch-enemy, the Prussian, is so unassimilative as he has proved to be. He attributes it to his origin: "He is the descendant on the male side of the turbulent robber soldiery of the Teutonic knights who conquered Prussia, and on the female side of the lowest type of outraged Lithuanian women among the original inhabitants." The progeny of robbers and slaves! Not a hopeful stock! But surely geographers knew this (if it is true) before the war. Why did they not warn politicians and others who were making their spiritual homes among these mongrels ("poisoned with bestiality and barbarism") of the mistakes they were committing and the dangers they were running?

Prof. Lyde's second contention is extraordinarily interesting and important. It is that geographical frontiers, when the principle of nationality permits, should be deliberately "anti-defensive," that is, should be chosen because they are indefensible, because they give facilities for intercourse rather than for separation; because they induce contact in time of peace, and not because they provide barriers in time of war. Hence he advocates a river frontier wherever it is feasible.

In the concluding chapters of his book Prof. Lyde applies his principles to the delimitation of Schleswig, Alsace-Lorraine, Poland, the Balkan States, etc. The text is illustrated by outline maps, but these are so poor in conception and execution as to irritate rather than assist. Needless to say, Prof. Lyde speaks from so intimate a knowledge of the regions of which he treats that his suggestions demand the most serious consideration of all who may have a voice in the future peace settlement.

THE SCHOOLMASTER IN FICTION.

The Soul of a Teacher. By Roger Wray. 320 pp. (Chapman and Hall.) 6s.

THE schoolmaster has figured a good deal in fiction, and on the whole it must be confessed that he has figured badly. He has generally been represented as a wielder of the ferule, an ignorant and domineering tyrant, a terror to others besides evil-doers, or at best a narrow pedant, whose range of vision does not extend beyond the walls of the schoolroom. There has been much excuse for such writing in the past; but there is no excuse now. It was therefore with some concern that we began to read "The Soul of a Teacher," by Roger Wray, whoever he may be. Let

us say at once that we were speedily reassured. Roger Wray has, in our opinion, produced not only a quite powerful and interesting novel, but also a true and vivid picture of one of a type newly risen in our generation—the adequately educated and well-trained elementary-school teacher.

Alan Clay, the hero of the story, is introduced to us as a boy in an elementary school. He wins a county council scholarship enabling him to pass on to the grammar school in a neighbouring town. But the grammar school is a bad specimen of the old type; an uncommonly bad specimen, we should have thought. The school is ill attended, the curriculum is narrow, and the teaching hopelessly inefficient. Alan and his kind, being of the common herd, the sons of tradesmen, are despised by the masters, and ill-treated by the other boys, "the sons of gentlemen." We hope and believe, by the way, that this grammar school is not a fair specimen of grammar schools as they existed, say, fifteen years ago. However, at the instance of the county council, the school is reformed by the appointment of a new staff, and so, after twelve miserable months, Alan enters upon a period of happy and profitable school life. In due course he elects to become a teacher, and proceeds to a training college, to which again he owes a debt of gratitude. His first experience as a trained teacher is sad, but, we fear, common: it is that of a man of high ideals being expected to turn himself into a machine. An early and mistaken marriage with his landlady's daughter is the more disastrous because poor Alan possesses "the prophetic temperament," which is even more prolific of absurd domestic situations than the artistic temperament would have been. He is unjustly accused of teaching socialism, by managers who have not the slightest notion of what the word means, and he is in consequence "transferred" to a slum school. Here we break off our bald outline of the story, lest the edge be taken off any reader's appetite for a plot. We trust we have given only enough of it to whet his appetite.

For the book is indeed well worth reading. There is a "good thing" on almost every page, and the chief character, Alan Clay, is drawn by no unskilled hand. He stands out clearly, and is at once recognised by anyone who knows our elementary-school system and its results. The minor characters also we know—Gladys, the wife, with her pathetic clinging to what is "respectable" as against her husband's alleged socialism; her parents, with their narrow and vulgar religiosity; the Rev. Arthur Hill, the strong-minded minister who destroys Alan's dream of entering the ministry; the vice-principal of the training college, whose government was "a mixture of severity and generosity which seldom erred in its effect." All these we know. Prilly, the vivacious and irresponsible girl, who is prepared to sacrifice so much for one crowded hour of glorious life, we do not know. But that is perhaps only because we have lived much in scholastic seclusion, and if Roger Wray says she exists, we are prepared to believe him.

Though the author portrays the concrete situation with a deft hand, we do not always agree with his general reflections on our educational system. We do not agree, for instance, that "the defects of all primary education are due to one fact, viz., that it aims solely at preparing the scholars for their future livelihood." We believe that primary education (and secondary education, too, for that matter) may be, and should be, at once liberal and vocational. But it would be out of place to argue this point here. We prefer to thank the author for what he has given us, and to recommend our readers to make the acquaintance of Alan Clay. Though the book is not open to the

objection that always lies against the novel "written with a purpose," there is a word in season here for most people connected with elementary education, including the school manager, and the head-teacher who has not learnt that the only way of getting the best out of a young man is to give him the utmost possible degree of freedom in teaching.

RECENT SCHOOL BOOKS AND APPARATUS.

Modern Languages.

Mon Premier Livre de Français. By F. M. S. Batchelor. (Oxford University Press.) 182 pp. 2s. 6d.; with phonetic transcription (44 pp.), 3s. 6d.; transcription only, 1s. 6d.—Miss Batchelor is favourably known by her "Exercises in French Grammar," and her new book also affords ample evidence of her skill as a teacher. She has realised the importance of a careful selection of the grammar and vocabulary, and the use that can be made of pictures. The lessons are carefully built up, and the subject-matter is suitable for young beginners; it includes Red Riding Hood and Puss in Boots. It is a pity that Miss Batchelor has not adopted the convenient plan of distinguishing new words by means of heavy type, and of giving a list of words with a reference to their first occurrence and the phonetic transcription. The phonetic section gives only lessons i. to xv., and the pronunciation of words in the remaining twenty-five lessons is not indicated. After the text of each lesson there is a list of "*mots nouveaux*"; but these lists have not been carefully checked. The decision not to introduce the "*passé historique*" has led to some awkward juxtaposition of tenses; it seems scarcely possible to do without it if there is to be narrative as distinguished from conversation. There is a good supply of exercises on reform lines. The book is on the whole well printed, and the illustrations are pleasing and helpful; of the wall pictures, the one in colours (price 5s.) is well suited for its purpose, from the artistic point of view; but the two uncoloured pictures (2s. 6d. each) are less successful. On the whole, the book is a conscientious piece of work, but it represents no features that could be called novel.

Class-room Phonetics: Suggestions for Lesson Notes. By Hardress O'Grady. 79 pp. (Constable.) 1s. net.—This book consists in the main (55 pp. out of 67 pp. of text) of articles contributed by Mr. O'Grady to THE SCHOOL WORLD in 1907. They were good articles, the work of a very capable teacher and keen phonetician; but in spite of what Mr. O'Grady pleads in his "explanatory foreword," we think he would have been well advised to recast and amplify them in the light of further experience acquired during the last eight years. In the foreword he makes some criticisms on the original articles, and he adds nine short notes; but a good deal more might have been done to bring the articles up to date. We hope that Mr. O'Grady will have the leisure and the inclination to re-write this book; of course, there is much that he will be able to retain with little alteration, if any.

Classics.

The Letters of Sidonius. Translated with introduction and notes by O. M. Dalton. clxxxiv + 88, 268 pp. (Clarendon Press.) 2 vols. 3s. 6d. each net.—This is the first complete translation of Sidonius, which gives the book an importance apart from its other merits. It is, however, in itself an important book. Sidonius lived in southern Gaul when the Roman empire was nearing its end, and he gives a unique

picture of provincial life in his letters. He was a contemporary of Attila, and in his youth the Huns were defeated on the Catalaunian plains; he tells us, indeed, that he once attempted to write a history of the war with Attila. He saw Rome before its sack by the Vandals, he knew Theodoric II., whose portrait he draws, and his correspondents or friends include nearly all the great names of his time. He describes more or less fully many of the human types that were familiar to his generation: the Saxon pirate, the pagan Frank, the skin-clad barbarians. Villas and bathrooms, and the phases of country life, hawking, hunting, and playing at ball are other favourite themes.

His affected style spoils the reader's pleasure, and therefore he is one of those authors whom it is more profitable to read in a translation. Mr. Dalton gives us the substance with most of the annoyances left out. He has wisely not tried to concoct a variety of English that might echo Sidonius's variety of Latin; the result is a very agreeable book, with a touch of artificiality in the manner of presentation. Mr. Dalton compares the society described not inaptly to England in the eighteenth century, with literary interests instead of sport in the first place. His translation, as we have suggested, is not literal; the precisiosities are paraphrased; but it is accurate, and the reader may be satisfied that he is not being misled as to the meaning. We cordially recommend this book to readers.

Horace and his Poetry, with Companion and Glossary. By J. B. Chapman. 140+134 pp. (Harrap.) 1s. 6d. net.—The first portion of the present volume, consisting of some 1500 lines from Horace interspersed with comment and appreciative criticism, which either elucidates the historical situations referred to, or adumbrates the personality of Horace himself, was published in 1913. Now we have added to it a "Companion," which contains notes on the selections in the first part, together with a glossary of the more uncommon words. The resulting volume is excellent; any sixth form boy who reads through it will have quite a good knowledge, and appreciation, of Horace; and the "Companion" makes it possible for a quite average schoolboy to read the book without having to refer either to dictionary or commentary. The notes are very good on the whole, though we wonder what a schoolboy will make of Mr. Chapman's comment on the well-known "*nec latentes classe cita reparavit oras*"—"nor with swift fleet did she take in exchange [for Egypt] unknown shores"; and scholars will smile at the dogmatic statement that "The only member of the paternal household to whom reference is made is a nurse, Pullia"; Mr. Chapman reads in "Odes," iii., 4, "*limina Pulliae*," and although he refers in the "Companion" to the commentators, he makes no reference to the almost certain "*limina Dauniae*" (see *Classical Review*, vol. xx., p. 304). Nevertheless, the volume is an almost ideal introduction to Horace, especially for young students or for those who are confined to "private reading."

English.

The Art of Story-telling. By M. L. Shedlock. 240 pp. (Murray.) 5s.—It is not a credit to us that the three best books on this subject have come from across the water; and though Miss Shedlock is, we believe, not American born, yet her book also is not without the American imprimatur. With the other books, i.e., with Miss Lynam, Mrs. Bryant, Prof. St. John, her book challenges comparison; it would not be fair to the rest to say that it makes them unneces-

sary. The outstanding feature in it, for which teachers of small children will bless her, is her list of stories and books, and all that she has to say about problems that beset the story-teller is well said, as, indeed, we should expect from one who has had so much experience in the art here and abroad. Prof. Adams contributes a preface, full of his usual raciness, but we should have preferred it had he taken the opportunity of saying something about this—Nature's method—of education, and had explained to us why all people love story-telling. The present generation is much in the debt of those who by book and example revive this, one of the oldest arts in the world.

Georgian Poetry. Four booklets. *The Perilous Light.* By Eva Gore-Booth. 63 pp. 1s. *The Fields of Heaven.* By N. T. Mahony. 52 pp. 1s. *Poems.* By Lieut. C. A. Macartney. 40 pp. 1s. *Heather Ways.* By H. C. Cole. 43 pp. 1s. (E. Macdonald).—It is true that schools rarely have the chance of seeing poems and poets until they have become classics, and the works, small or great, that move men at the time have to wait for a generation until the second reaping arrives. This is the main argument against high prices for poetry, although one does not see how poets are to live if their works are to be published at popular prices. In these little volumes, daintily printed, there is much to recommend to the school; "The Perilous Light" itself, the name of the first poem; "The Lament for Fionavar," the "Vagrant's Romance," "Unseen Kings," "The Agate Lamp," almost all of Miss Cole's book, some of the poems written by one at the war and republished from the *Wykehamist*, are sure to win the suffrages of fifth form and sixth form, even though the books tell of the old primrose, spring, the tramp, the lunatic, and other themes loved of the young poet. Whether there is in any of these volumes that which will escape the biting tooth of Time is another matter, and none may prophesy. Some of the verses remind us of the Rupert Brookes and the other poets, who died singing, "O dear world, O glad world, wake me not from my dreaming; O calling voices of the world, keep still and let me be." The publisher has many other new poems in his wallet.

Spindrift. Edited by G. Callender. 417 pp. (Cambridge University Press.) 3s.—This book is new in idea, and is, as its sub-title claims, "salt from the ocean of English prose." The editor's wish was to show the sea in our literature, and the preface, which appears to come from that *rara avis* a literary sailor, breathes spindrift. We start with Wyclif and the story of Jonah, and in his train appear Malory, Hakluyt, and Purchas (will editors not tell us how they pronounce these two names?), the A.V., Evelyn, Addison, Defoe, Smollett, and so on to Prescott, Thackeray, and Froude. It would be easy to suggest other names, but there is plenty here for all sea-lovers, young and old. We should, though, have liked a few of the passages which are unintelligible without a short glossary; for the cant of every life, the sailor's especially, holds its pith.

History.

France at War. By Rudyard Kipling. 73 pp. (Macmillan.) 6d. net.—Everything that Mr. Rudyard Kipling writes is sure of its thousands of readers. He has written few things more moving in its magnificent pathos than this word-picture of France at war. It is evident in every line that he is describing what he has himself seen, and what has stirred him to the depths of his soul. He presents a splendid spectacle of a nation fighting for existence, struggling for deliverance

from a bestial and merciless foe, rising to unsurpassable heights of heroic achievement. If there are any who, after all the revelations of the year and more of war, still doubt the righteousness of the cause of the Allies, let them read, mark, learn, and inwardly digest the message of this simple but masterly narrative.

The Revolutionary Period in Europe: 1763-1815. By H. E. Bourne. 494 pp. (Bell.) 7s. 6d. net.—Prof. Bourne, of the Western Reserve University in America, is already favourably known in this country as the author of a valuable work on "The Teaching of History and Civics." The present volume from his pen shows that he not only knows the method of historical instruction, but also is a master of the records of one of the most intricate and important periods of European history. It is curious to have the date of the Revolutionary period carried back to the year 1763, exactly a quarter of a century before revolution actually broke out in Europe. But Prof. Bourne makes out a good case for the antedating of the crisis. For he has no difficulty in showing that the mistaken zeal of the benevolent despots, and the effectual ferment of the ideas of Rousseau and his contemporaries, were all the time preparing the materials for the explosion of 1789.

It does not appear that Prof. Bourne claims to throw any new light on this well-traversed era. He is content to tell in some detail the story of its main incidents. Possibly in America this story is not so readily accessible in other books as it is in England, France, or Germany. Those who are looking for a good introduction to the study of the critical half-century from the Peace of Paris to the Peace of Vienna will find this handbook, with its copious supply of excellent maps, distinctly useful.

How Wars were Won: a Short Study of Napoleon's Times. By George Townsend Warner. 236 pp. (Blackie.) 5s. net.—Mr. Townsend Warner has a singular and enviable gift of making any subject that he handles both fascinating and informative. In the volume before us he prints a course of lectures which he has been in the habit of delivering to the young men of the Officers Training Corps at Harrow, and we can well understand that his hearers found them of absorbing interest. They discuss in detail the causes which gave success to one side, and those which involved defeat to the other side, in several of the typical campaigns of the Revolutionary and Napoleonic wars. The principal operations discussed are those of the Tourcoing campaign, 1794; the Ulm campaign, 1805; the Jena campaign, 1806; and the campaigns of Wellington in the Peninsula. They are not taken in chronological order, but in such an order as best illustrates various general features of military significance—the main determinants of victory—which are discussed in three preliminary chapters. Mr. Townsend Warner does not hesitate to point morals, or to adorn his tale with practical inductions. He insists, for instance, on the extreme difficulty of extemporising armies to meet sudden emergencies, and he demonstrates that "sea-power alone cannot decide a great war," but merely can provide the conditions in which land-power can force the issue. This is a valuable and timely book.

The War, 1915: a History and an Explanation for Boys and Girls. By Elizabeth O'Neill. x+86 pp. (Jack.) 1s. 6d. net.—This volume continues the story of the war which Mrs. O'Neill commenced in "The War of 1914," and "The War, 1914-15." It narrates, in language suited to children, the tale of the leading movements in the main theatres of the great struggle

during the spring and summer of the present year. It is curious to note how Mrs. O'Neill contrives to invest with an air of satisfaction and success the record of such episodes as "The Fierce Struggle on the Russian Front" and "The Struggle for the Dardanelles." One comes to believe that, after all, the difference between victory and defeat is merely something in the mode of narration. The illustrations are vivid and good; but some of them are, in our opinion, far more sanguinary than is desirable in books intended for children.

Geography.

Cambridge Travel Books. The North-west and North-east Passages, 1576-1611. Edited by P. F. Alexander. 211+xix pp. Maps and illustrations. (Cambridge University Press.) 2s. 6d. net.—This book inaugurates a series intended to illustrate the history of geographical discovery by means of select voyages and travels; "it is hoped that these books may be of service in schools, used either as readers or as an aid to the teaching of geography." Mr. Alexander has included accounts of the first and second voyages of Frobisher, the three voyages of John Davis, and the last voyage of Hudson in connection with the exploration of the North-west Passage, and of the third voyage of Barents in relation to the North-east Passage. He has provided a short historical introduction, and gives in an appendix the account of the discovery of Barents's house in 1871 by a Norwegian who visited Novaya Zemlya. Each story has been written by one of the exploring party, and the spelling and punctuation have been modernised wherever necessary, though archaic words have been retained, and are explained in notes. This book should be a valuable addition to the school geographical library, more especially on account of the illustrations, which are historically valuable.

War Map of Europe. Fully coloured. (Johnston.) Unmounted, 6d. net; cloth, folded, 2s.; cloth on rollers, varnished, 3s. 6d.—This map shows Europe south of the Shetlands and west of Astrakhan, on a scale of seventy-six miles to an inch. The several countries are coloured distinctly, and the map will serve to visualise usefully the operations of the present stage of the war, with the exception of those which are staged in Mesopotamia. The main railway lines are indicated, and the place-names are sufficiently numerous for most purposes.

Mathematics.

Lessons in Geometry. By C. McLeod. xi+507 pp. (Aberdeen University Press.) 3s. net.—We regard this as a text-book of the best type. Its point of view may be regarded as a conservative liberalism. While adhering to Euclidean methods, the harshness of the rigorously formal mode of presentation, which makes no allowances for the imperfect development of the beginner's reasoning powers, is softened by the practical exercises and the explanatory commentary. The first part contains the subject-matter of the first three books of Euclid, the leading propositions of the eleventh book, and the properties of similar figures. The second part continues the discussion of the two last topics, and then proceeds to solid mensuration, elementary trigonometry, and the discussion of functionality, thereby introducing the calculus. The examples are numerous, and amongst them will be found practically all the well-known subsidiary theorems which are not contained in the text. The only unsatisfactory feature of the book is the way in which the figures are drawn. They seem to have been copied directly from the author's diagrams. Many are

too small, and the lettering is bad. The book deserves better figures.

The Rapid Reckoning Chart. By E. E. Fournier d'Albe. (Educational Supply Association.) 3d. net.—This is a square divided logarithmically by lines the equations of which are $x = a \log_{10} p$, $y = a \log_{10} q$, the value of a being approximately 5 in. Lines parallel to $x + y = 0$ join corresponding points on the axes of x and y , and determine another logarithmic scale by their intersections with $x - y = 0$, the scale of which is less than that of the ones along the axes in the ratio of 1 to $\sqrt{2}$. By means of these three scales the results of the operations of multiplication, division, squaring, and extraction of square roots are obtained easily, for it is obvious that the logarithm of the product of p , q , is the projection on $x - y = 0$ of the line joining the origin to the point the co-ordinates of which are $a \log_{10} p$, $a \log_{10} q$. The addition of the lines $2y = x$, $2y = x + a$, facilitates the performance of the operations of cubing and of extracting cube roots.

The only superiority which the chart possesses over the ordinary slide rule lies in the matter of price. Its most manifest inferiority lies in the absence of some mechanical device similar to the cursor which enables us to fix our attention on the numbers which are being manipulated. A piece of celluloid with three intersecting lines parallel to $x = 0$, $y = 0$, and $x + y = 0$ would serve the purpose, provided it did not warp.

Science and Technology.

Science of Dairying. A text-book for the use of secondary and technical schools. By W. A. G. Penlington. 260 + viii pp. (Macmillan.) 2s. 6d.—Dairy science is in greater demand in some of our colonies and in the United States than in England, and the contents of this manual would probably be considered by the Board of Education as too technical to be included in the curriculum of our secondary schools, though the inclusion might conceivably be quite as educational and more useful than much that is at present admitted.

The author has treated the subject simply but with thoroughness, and the book is printed clearly, and well illustrated. It should be in the hands of every budding dairy farmer, and will be of great use in farm schools and technical institutes in which farmers are being trained. It seems a pity that the somewhat complicated Babcock tests have been preferred to the simpler Gerber tests. This preference makes the tests for the acidity of whey needlessly complicated (pp. 131 *et seq.*); 1 gram of phenolphthalein to 250 cc. of alcohol will be found ample (p. 131). On p. 147 the herd mentioned seems to contain 9 cows, not 10. The account of the Gerber test (p. 88) is inadequate and imperfect. The specific gravity of pure whole milk may vary between 1.029 and 1.034, and will only be "nearly always between 1.032 and 1.034" with some breeds (p. 16).

First Aid in the Laboratory and Workshop. By A. A. Eldridge and H. V. A. Briscoe. 32 pp. (Edward Arnold.) 1s. net.—This excellent little book should find a place in every school laboratory. Although most science masters know in theory what remedy to apply or what course to follow in an emergency, it frequently happens that rapidity of action is all-important, and little time is available for the knowledge to be translated into practice. In such cases the concise directions given here are valuable. The contents show that the authors have considered most of the possibilities in the way of school accidents, seeing that they discuss cuts and wounds, burns and scalds, eye injuries, bruises, crushed limbs, shock, asphyxia, poisoning, artificial respiration, and fire.

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"Oxford Treasury of French Literature." Vol. i. By A. G. Latham. 332 pp. (Clarendon Press.) 3s. 6d.

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"The Active-Service French Book." By Ajax and E. F. Harris. 56 pp. (Marlborough.) 6d. net, waterproof cover.

"Hindustani Self-Taught." By Capt. C. A. Thimm. Hindustani text revised by J. F. Blumhardt. (Marlborough.) 2s.; cloth, 2s. 6d.

Classics.

Cæsar: "De Bello Gallico, II." By E. S. Shackburgh. New illustrated edition. xxvi + 88 pp. (Cambridge University Press.) 1s. 6d.

Cæsar: "De Bello Gallico VII." By E. S. Shackburgh. New illustrated edition. xxiv + 178 pp. (Cambridge University Press.) 1s. 6d.

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"Marlborough College Notes on Analysis." By C. Stagg. 44 pp. (Blackie.) 8d. net.

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